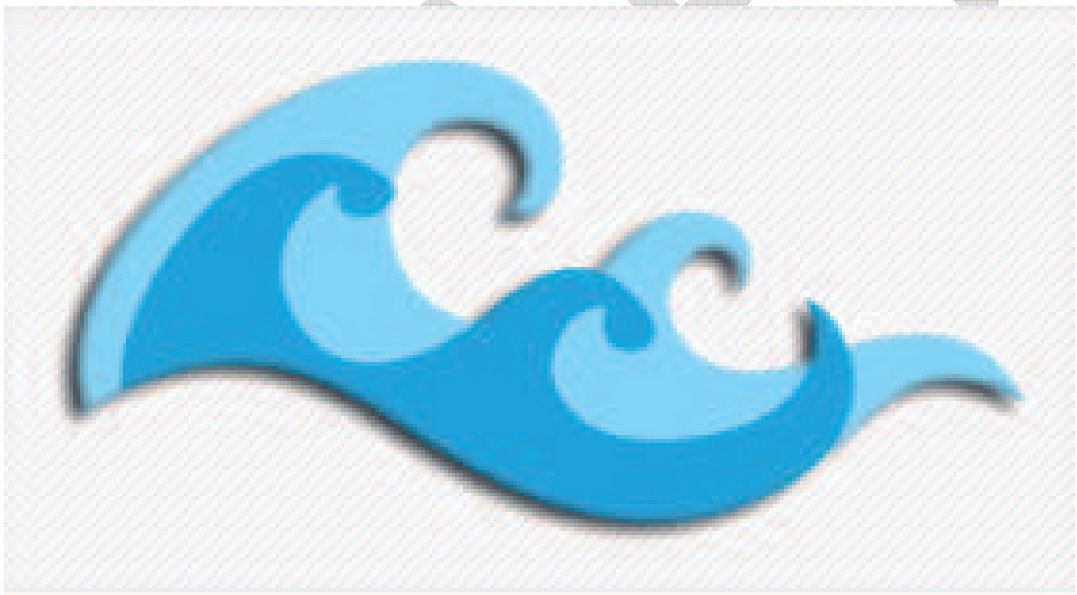
San Luis Obispo County Department of Planning and Building

Onsite Wastewater Treatment Systems Local Agency Management Program



Jim Bergman, Director
2016 Hybrid Draft

TABLE OF CONTENTS

INTRODUCTION

The Local Agency Management Program (LAMP) is the culmination of the actions required by Assembly Bill 885 (AB 885). AB 885 was introduced to the California State Assembly on February 25, 1999 and approved on September 27, 2000. This legislation directed the State Water Resources Control Board (SWRCB) to develop regulations or standards for onsite wastewater treatment systems (OWTS) to be implemented by qualified local agencies. The SWRCB adopted the Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems on June 19, 2012 (OWTS Policy). The policy was subsequently approved by the Office of Administrative Law on November 13, 2012 and became effective on May 13, 2013. The OWTS Policy allows local agencies to approve OWTS, based on a local ordinance, after approval of a LAMP by the Regional Water Quality Control Board (RWQCB).

The purpose of the LAMP is to allow the continued use of onsite wastewater treatment systems (OWTS) within the jurisdiction of San Luis Obispo County as well as to expand the local program to permit and regulate alternative OWTS while protecting water quality and public health. The LAMP also applies to OWTS on federal, state, and tribal lands to the extent authorized by law or agreement.

The LAMP is designed to protect groundwater sources and surface water bodies from contamination through the proper design, placement, installation, maintenance, and assessment of individual OWTS. This plan develops minimum standards for the treatment and ultimate disposal of sewage though the use of OWTS in San Luis Obispo County. The LAMP does not include the following which require individual waste discharge requirements or a waiver of individual waste discharge requirements issued by the RWQCB.

- Any OWTS with a projected wastewater flow of over 5,000 gallons per day.
- Any OWTS used for winery production waste on winery's producing more than 10,000 cases a year.

DEFINITIONS

"303 (d) list" means the same as "**Impaired water bodies.**"

"Basin Plan" means the same as "water quality control plan" as defined in Division 7 (commencing with Section 13000) of the Water Code. Basin Plans are adopted by each Regional Water Board, approved by the State Water Board and the Office of Administrative Law, and identify surface water and groundwater bodies within each Region's boundaries and establish, for each, its respective beneficial uses and water quality objectives. Copies are available from the Regional Water Boards, electronically at each Regional Water Boards website, or at the State Water Board's *Plans and Policies* web page (http://www.waterboards.ca.gov/plans_policies/).

"Bedrock" means the rock, usually solid, that underlies soil or other unconsolidated, surficial material.

"Cap/Cap depth" means the depth below the natural ground surface to the top of the horizontal or vertical seepage pit system where the infiltrative sidewall surface begins.

"CEDEN" means California Environmental Data Exchange Network and information about it is available at the State Water Boards website or http://www.ceden.org/index.shtml.

"Cesspool" means an excavation in the ground receiving domestic wastewater, designed to retain the organic matter and solids, while allowing the liquids to seep into the soil. Cesspools differ from seepage pits because cesspool systems do not have septic tanks and are not authorized under this Policy. The term cesspool does not include pit-privies and out-houses which are not regulated under this Policy.

"Clay" means a soil particle; the term also refers to a type of soil texture. As a soil particle, clay consists of individual rock or mineral particles in soils having diameters <0.002 mm. As a soil texture, clay is the soil material that is comprised of 40 percent or more clay particles, not more than 45 percent sand and not more than 40 percent silt particles using the USDA soil classification system.

"Cobbles" means rock fragments 76 mm or larger using the USDA soil classification systems.

"Cut/Slope" means any slope greater than 60% or man-made contour that exposes the vertical soil profile. Cuts and slopes require a 5 foot horizontal setback for every 1 foot of vertical height to any dispersal system.

"Dispersal system" means a leach field, seepage pit, mound, subsurface drip field, or other type of system for final wastewater treatment and subsurface discharge.

"Domestic wastewater" means wastewater with a measured strength less than high-strength wastewater and is the type of wastewater normally discharged from, or similar to, that discharged from plumbing fixtures, appliances and other household devices including, but not limited to toilets, bathtubs, showers, laundry facilities, dishwashing facilities, and garbage disposals. Domestic wastewater may

include wastewater from commercial buildings such as office buildings, retail stores, and some restaurants, or from industrial facilities where the domestic wastewater is segregated from the industrial wastewater. Domestic wastewater may include incidental RV holding tank dumping but does not include wastewater consisting of a significant portion of RV holding tank wastewater such as at RV dump stations. Domestic wastewater does not include wastewater from industrial processes.

"Dump station" means a facility intended to receive the discharge of wastewater from a holding tank installed on a recreational vehicle. A dump station does not include a full hook-up sewer connection similar to those used at a recreational vehicle park.

"Domestic well" means a groundwater well that provides water for human consumption and is not regulated by the California Department of Public Health.

"Earthen material" means a substance composed of the earth's crust (i.e. soil and rock).

"Effluent" means sewage, water, or other liquid, partially or completely treated or in its natural state, flowing out of a septic tank, aerobic treatment unit, dispersal system, or other OWTS component.

"Electronic deliverable format" or **"EDF"** means the data standard adopted by the State Water Board for submittal of groundwater quality monitoring data to the State Water Board's internet-accessible database system Geotracker (http://geotracker.waterboards.ca.gov/).

"Existing OWTS" means an OWTS that was constructed and operating prior to the effective date of this Policy, and OWTS for which a construction permit has been issued prior to the effective date of the Policy.

"Flowing water body" means a body of running water flowing over the earth in a natural water course, where the movement of the water is readily discernible or if water is not present it is apparent from review of the geology that when present it does flow, such as in an ephemeral drainage, creek, stream, or river.

"Groundwater" means water below the land surface that is at or above atmospheric pressure.

"Horizontal seepage pit" means a gravel filled dug excavation, four to six feet wide, six to seven feet deep with a cap depth of two to five feet, and length determined by the percolation rate of the soil and receives the effluent discharge from a septic tank or other OWTS treatment unit for dispersal.

"High-strength wastewater" means wastewater having a 30-day average concentration of biochemical oxygen demand (BOD) greater than 300 milligrams-per-liter (mg/L) or of total suspended solids (TSS) greater than 330 mg/L or a fats, oil, and grease (FOG) concentration greater than 100 mg/L prior to the septic tank or other OWTS treatment component.

"IAPMO" means the International Association of Plumbing and Mechanical Officials.

"Impaired water bodies" means those surface water bodies or segments thereof that are identified on a list approved first by the State Water Board and then approved by US EPA pursuant to Section 303(d) of the federal Clean Water Act.

"Local Agency" means any subdivision of state government that has responsibility for permitting the installation of and regulating OWTS within its jurisdictional boundaries; typically a county, city, or special district.

"Major repair" means either: (1) for a dispersal system, repairs required for an OWTS dispersal system due to surfacing wastewater effluent from the dispersal field and/or wastewater backed up into plumbing fixtures because the dispersal system is not able to percolate the design flow of wastewater associated with the structure served, or (2) for a septic tank, repairs required to the tank for a compartment baffle failure or tank structural integrity failure such that either wastewater is exfiltrating or groundwater is infiltrating.

"Mound system" means an aboveground dispersal system (covered sand bed with effluent leach field elevated above original ground surface inside) used to enhance soil treatment, dispersal, and absorption of effluent discharged from an OWTS treatment unit such as a septic tank. Mound systems have a subsurface discharge.

"New OWTS" means an OWTS permitted after the effective date of this Policy.

"NSF" means NSF International (a.k.a. National Sanitation Foundation), a not for profit, non-governmental organization that develops health and safety standards and performs product certification.

"Oil/grease interceptor" means a passive interceptor that has a rate of flow exceeding 50 gallons-per-minute and that is located outside a building. Oil/grease interceptors are used for separating and collecting oil and grease from wastewater.

"Onsite wastewater treatment system(s)" (**OWTS**) means individual disposal systems, community collection and disposal systems, and alternative collection and disposal systems that use subsurface disposal. The short form of the term may be singular or plural. OWTS do not include "gray water" systems pursuant to Health and Safety Code Section 17922.12.

"P&B" means San Luis Obispo County Department of Planning and Building.

"Percolation test" means a method of testing water absorption of the soil. The test is conducted with clean water and test results can be used to establish the dispersal system design.

"Permit" means a document issued by a local agency that allows the installation and use of an OWTS, or waste discharge requirements or a waiver of waste discharge requirements that authorizes discharges from an OWTS.

"Person" means any individual, firm, association, organization, partnership, business trust, corporation, company, State agency or department, or unit of local government who is, or that is, subject to this Policy.

"Pit-privy" (a.k.a. outhouse, pit-toilet) means self-contained waterless toilet used for disposal of non-water carried human waste; consists of a shelter built above a pit in the ground into which human waste falls.

"Pollutant" means any substance that alters water quality of the waters of the State to a degree that it may potentially affect the beneficial uses of water, as listed in a Basin Plan.

"Projected flows" means wastewater flows into the OWTS determined in accordance with any of the applicable methods for determining average daily flow in the *USEPA Onsite Wastewater Treatment System Manual, 2002,* or for Tier 2 in accordance with an approved Local Agency Management Program.

"Public water system" is a water system regulated by the California Department of Public Health or a Local Primacy Agency pursuant to Chapter 12, Part 4, California Safe Drinking Water Act, Section 116275 (h) of the California Health and Safety Code.
"Public water well" is a ground water well serving a public water system. A spring which is not subject to the California Surface Water Treatment Rule (SWTR), CCR, Title 22, sections 64650 through 64666 is a public well.

"Qualified professional" means an individual licensed or certified by a State of California agency to design OWTS and practice as professionals for other associated reports, as allowed under their license or registration. Depending on the work to be performed and various licensing and registration requirements, this may include an individual who possesses a registered environmental health specialist certificate or is currently licensed as a professional engineer or professional geologist. For the purposes of performing site evaluations, Soil Scientists certified by the Soil Science Society of America are considered qualified professionals. A local agency may modify this definition as part of its Local Agency Management Program.

"Qualified service provider" means a person capable of operating, monitoring, and maintaining an OWTS in accordance with the State Water Board OWTS Policy. The individual must also be certified and/or trained extensively by the manufacturer of an OWTS with supplemental treatment to install, maintain, service, and repair the specific model/type of OWTS.

"Regional Water Board" is any of the Regional Water Quality Control Boards designated by Water Code Section 13200. Any reference to an action of the Regional Water Board in this Policy also refers to an action of its Executive Officer, including the conducting of public hearings, pursuant to any general or specific delegation under Water Code Section 13223.

"**Repair"** is any action that modifies/replaces the existing dispersal system, replaces an existing septic tank, or modifies/replaces a major component of the onsite wastewater treatment system. Repairs require the issuance of a Permit by the County of San Luis Obispo Planning and Building Department and must be inspected by Planning and Building staff.

"Replacement OWTS" means an OWTS that has its treatment capacity expanded, or its dispersal system replaced or added onto, after the effective date of this Policy.

"Sand" means a soil particle; this term also refers to a type of soil texture. As a soil particle, sand consists of individual rock or mineral particles in soils having diameters ranging from 0.05 to 2.0 millimeters. As a soil texture, sand is soil that is comprised of 85 percent or more sand particles, with the percentage of silt plus 1.5 times the percentage of clay particles comprising less than 15 percent.

"Septic tank" means a watertight, covered receptacle designed for primary treatment of wastewater and constructed to:
1. Receive wastewater discharged from a building;
2. Separate settleable and floating solids from the liquid;
3. Digest organic matter by anaerobic bacterial action;
4. Store undigested solids; and February 24, 2015 6
5. Clarify wastewater for further treatment with final subsurface discharge.

"**Septage**" means any fluid, solid, or undetermined mass in a septic tank. It is considered high-strength waste and shall be handled and disposed of in an approved manner. Septage includes both sides of the septic tank, including liquor and effluent.

"Silt" means a soil particle; this term also refers to a type of soil texture. As a soil particle, silt consists of individual rock or mineral particles in soils having diameters ranging from between 0.05 and 0.002 mm. As a soil texture, silt is soil that is comprised as approximately 80 percent or more silt particles and not more than 12 percent clay particles using the USDA soil classification system.

"Site" means the location of the OWTS and, where applicable, a reserve dispersal area capable of disposing of 100% of the design flow from all sources the OWTS is intended to serve.
"Site evaluation" means an assessment of the characteristics of the site sufficient to determine its suitability for an OWTS to meet the requirements of this Policy.

"Soil" means the naturally occurring body of porous mineral and organic materials on the land surface, which is composed of unconsolidated materials, including sand-sized, silt-sized, and clay-sized particles mixed with varying amounts of larger fragments and organic material. The various combinations of particles differentiate specific soil textures identified in the soil textural triangle developed by the United States Department of Agriculture (USDA) as found in Soil Survey Staff, USDA; *Soil Survey Manual, Handbook 18,* U.S. Government Printing Office, Washington, DC, 1993, p. 138. For the purposes of this Policy, soil shall contain earthen material of particles smaller than 0.08 inches (2 mm) in size.

"Soil structure" means the arrangement of primary soil particles into compound particles, peds, or clusters that are separated by natural planes of weakness from adjoining aggregates.

"Soil texture" means the soil class that describes the relative amount of sand, clay, silt and combinations thereof as defined by the classes of the soil textural triangle developed by the USDA (referenced above).

"State Water Board" is the State Water Resources Control Board

"**STS"** is the acronym used in place of Onsite Wastewater Treatment System with Supplemental Treatment.

"Substandard system" means any existing OWTS that does not conform to the accepted requirements related to system sizing, setbacks, groundwater separation, or allowable cover.

"Supplemental treatment" means any OWTS or component of an OWTS, except a septic tank or dosing tank, that performs additional wastewater treatment so that the effluent meets a predetermined performance requirement prior to discharge of effluent into the dispersal field.

"SWAMP" means Surface Water Ambient Monitoring Program and more information is available at: http://www.waterboards.ca.gov/water_issues/programs/swamp/

"Telemetric" means the ability to automatically measure and transmit OWTS data by wire, radio, or other means.

"TMDL" is the acronym for "total maximum daily load." Section 303(d)(1) of the Clean Water Act requires each State to establish a TMDL for each impaired water body to address the February 24, 2015 7 pollutant(s) causing the impairment. In California, TMDLs are usually adopted as Basin Plan amendments and contain implementation plans detailing how water quality standards will be attained.

"Vertical seepage pit" means a drilled excavation, four feet in diameter, that is gravel filled, and receives the effluent discharge from a septic tank or other OWTS treatment unit for dispersal.

"Waste discharge requirement" or **"WDR"** means an operation and discharge permit issued for the discharge of waste pursuant to Section 13260 of the California Water Code.

CHAPTER 1

Onsite Wastewater Treatment Systems Permitting Process and Design Criteria

This Chapter describes how OWTS are reviewed and permits issued in San Luis Obispo County. The document also summarizes key design criteria for these systems. This document relies on and should be read together with Chapter 2 of this LAMP "Groundwater Separation Requirements for Onsite Wastewater Treatment Systems."

STATE and COUNTY ROLES

State / County Coordination

OWTS discharge pollutants to groundwater, and therefore are regulated by the State Water Code. Water Code section 13282, allows Regional Water Quality Control Boards (RWQCB) to authorize a local public agency to issue permits for and to regulate OWTS "to ensure that systems are adequately designed, located, sized, spaced, constructed and maintained." The RWQCB, with jurisdiction over San Luis Obispo County authorizes the County of San Luis Obispo (County), Department of Planning and Building (P&B) to issue certain OWTS permits throughout the county.

The RWQCB has imposed conditions and restrictions on the County's permit program and the County is authorized to issue permits for conventional OWTS and alternative OWTS with supplemental treatment anywhere in the County. P&B requires that at least a five-foot separation be maintained between the bottom of the OWTS disposal point and the highest anticipated groundwater level for conventional OWTS, and at least a two-foot separation be maintained for alternative OWTS with supplemental treatment.

The goal of P&B's OWTS program is to ensure that installed OWTS will last the life of the structure they serve, and not cause any public exposure to surfacing sewage or any contamination of groundwater or surface waters. The County concurs with the RWQCB that the separation requirements the RWQCB has imposed are appropriate minimum requirements necessary to protect groundwater quality and public health whenever OWTS are used for sewage disposal. These requirements are a condition of the State's authorization for the County to issue OWTS permits locally. These restrictions cannot be modified by the County on a case-by-case basis, and must be rigorously implemented. Chapter 2 of this LAMP describes in detail how the County ensures that these State-imposed requirements are met.

SYSTEM DESIGN CONSIDERATIONS

The most common type of OWTS found in San Luis Obispo County consists of a septic tank connected to leach lines. Variations of this system may include a septic tank connected to either a horizontal or vertical seepage pit. In some applications, the disposal field is at a higher elevation than the building site. In this instance, a pressure-system is used to deliver the sewage to a standard disposal field where it is distributed by gravity flow. All of these examples would be considered a conventional OWTS because no further sewage treatment is performed between the septic tank and the disposal field. In all cases, the sewage effluent is discharged below the ground surface, and is digested by bacteria in

unsaturated soil zones for treatment of the sewage underground. These systems are designed to operate in all weather conditions with minimal maintenance, other than periodic septic tank pumping to remove sludge from the septic tank. (SEE Appendix III for requirements for specified areas)

In addition to conventional OWTS, the County also allows the use of alternative OWTS with supplemental treatment. These systems are generally used for those sites that cannot support a conventional OWTS due to shallow groundwater or soil depth conditions. Alternative OWTS use different methods of providing additional sewage treatment beyond what is provided by the septic tank to allow for a reduction in the amount of unsaturated soil below the dispersal system. All alternative OWTS must be certified by the National Sanitation Foundation or other approved third party tester. Due to the complexity of these systems, ongoing maintenance contracts and annual operating permits are also required.

The size and type of OWTS needed for a particular building project will be a function of the following factors:

Soil Permeability: Permeability determines the degree to which soil can accept sewage discharge over a period of time. Permeability is measured by percolation rate, in minutes per inch (MPI).

Unsaturated Soil Interval: The distances between the bottom of the OWTS dispersal field and the highest anticipated groundwater level or the shallowest impervious subsurface layer at a site.

Peak Daily Flow: The anticipated peak sewage flow in gallons per day. In many cases the number of bedrooms for a proposed home is used as an indicator of peak daily flow.

Net Usable Land Area: The area available that meets all setback requirements to structures, easements, watercourses, or other geologic limiting factors for

Some sites are not acceptable for conventional or alternative OWTS based on low soil permeability, regardless of the unsaturated soil interval available at the site.

All conventional OWTS in San Luis Obispo County will require at least five feet of unsaturated soil between the bottom of the dispersal system and the highest anticipated groundwater level for the site. Alternative OWTS will require at least two feet. Depth to groundwater varies tremendously with the amount of rainfall for many areas in San Luis Obispo County. Therefore, the highest anticipated groundwater levels must be established for any OWTS design in order to meet this separation requirement. Details are provided in the Chapter 2 of this LAMP.

At sites affected by a shallow impervious layer of rock or clay, a minimum five-foot unsaturated soil interval is required between the bottom of the disposal system and the shallowest impervious layer. The net useable land area required for an OWTS will usually depend primarily on soil permeability and peak daily flow. Details on setback requirements and net useable land areas requirements are provided below.

THE PERMIT PROCESS

STEPS IN THE PERMITTING PROCESS

The County P&B OWTS permitting process includes the steps set out below:

1. If a percolation test is needed, the applicant must submit a percolation test and design as performed by a registered civil engineer, registered geologist or registered environmental health specialist, approved by County P&B for testing within San Luis Obispo County,

A percolation test may be required when:

- Grading or other soil disturbance has occurred in the proposed OWTS location;
- The system is being shifted out of the previously tested area; or
- An OWTS other than the system previously considered is being proposed.

County P&B approval of a percolation test design expires after one year, however the test data remains valid and may be used later to design and size an OWTS for a project.

Note: Grading or clearing of brush for the purposes of completing a percolation test may require approval from P&B and may trigger the implementation of storm water best management practices.

2. With percolation test data and other data in hand, the applicant must develop and submit a Layout Design for the proposed building project and specific OWTS, for County P&B review. The Layout Design must take percolation test data and this guidance into account. See below, “The Layout Design” for additional information on submission requirements.

3. After review, if it appears likely that the proposed OWTS can be permitted at the site, County P&B will provide an approval for the Layout Design. The County may require additional testing before providing this approval. In some cases, this additional testing will include depth to groundwater measurements during a normal average rainfall year. This may delay County P&B approval for a year or more. In some cases, P&B may conclude that a conventional or alternative OWTS cannot be safely used on the lot.

4. Some projects will require local grading permits and some will not. Requirements for grading permits in the unincorporated area of the County are discussed briefly below. Approved layouts and OWTS permits are not grading permits.

5. Before a permit to construct the OWTS can be issued, the applicant must provide County P&B proof that a potable water supply is available for the project. Potable water in this context is water that meets bacteriological and nitrate water quality standards as defined in the California Safe Drinking Water Act for a private residence. In some situations, additional water quality testing may be required, contact County Environmental Health Services Department (EHS) for testing requirements.

6. Once the permit to construct the OWTS, has been obtained, the OWTS can be installed. The system must be inspected by County P&BP before the system is backfilled. Appropriate best management storm water practices must be implemented as needed. If that inspection is satisfactory, P&B will sign off on the OWTS permit. Occasionally, P&B will hold final approval on the OWTS permit pending specific conditions to be met.

THE LAYOUT DESIGN

A layout design of the proposed building construction and OWTS is required. This drawing should be prepared using standard engineer's scale on 8.5" x 11" or 11" x 17" size paper. The basis for the OWTS design will be from percolation testing data and/or conditions of approval from a recorded subdivision map, parcel map, boundary adjustment, or certificate of compliance. The size of the OWTS is a function of the anticipated peak sewage flow based on the number of bedrooms, dwellings or use, and the percolation rate of the soil on the site.

The layout design should contain the following information:

- Site Address;
- Tax Assessor's Parcel Number;
- Owner's Name, mailing address, and phone number;
- Consultant's name, mailing address, and phone number;
- Type of proposed construction (residential vs. commercial);
- Number of existing or proposed bedrooms;
- Purpose of project (e.g. new dwelling, new structure, guesthouse, an addition, etc.) Specify scope of work;
- Legal Basis of parcel (map and lot number);
- Vicinity Map, Scale, North arrow, Thomas Bros. Map coordinates;
- Property Lines and lot dimensions;
- Topographical lines and elevation points (pad, floor, top leach line, etc);
- Percent slope and direction of fall;
- Proposed OWTS design detail;
- Proposed grading with 5:1 setbacks shown along with any impacts to the site and/or adjacent property. Include energy dissipaters for pad drainage;
- All known, recorded easements on or within 20 feet of lot boundaries (open-space, utility, road, waterline, etc.);
- Identify source of potable water;
- Location of all public waterlines on or within 20 feet of property and signed water line statement;
- Location of all wells on or within 150 feet of property;
- Any soils testing information, such as deep borings or percolation tests, plotted on the design.

The layout or percolation test design approval is valid for one year. The soils testing data does not expire and will be valid in the use of the system design, unless site conditions change. If a site review reveals any evidence of groundwater changes, including but not limited to; plant growth, ponding water, new information on adjacent lots or OWTS failures in the area, additional groundwater test borings may be required. P&B staff will specify the depth and the locations of the additional test borings in consultation with project qualified professional.

- If groundwater is observed in the borings and/or P&B has reason to believe that groundwater could rise to an unacceptable level which would not meet the minimum separation requirements during the course of a normal rainfall season, a permit will not be issued and monitoring may be required. Monitoring must be conducted during the course of a normal rainfall year when full groundwater recharge has occurred.

- The qualified professional must support their express conclusion that the highest anticipated groundwater elevation will not encroach upon the minimum separation from the bottom of the proposed OWTS. The supporting data shall include, but not be limited to, data on the sites topography, soils, geology, basin studies, hydro geologic studies, and groundwater-monitoring data from the onsite and offsite observation wells through a normal rainfall year. For more information, see Chapter 2 of this LAMP.

PRIMARY AND RESERVE AREA REQUIREMENTS

In addition to primary system design criteria, all OWTS design proposals, for both new construction and additions to an existing structure, must show 100% reserve area for the active OWTS. Any parcels once certified with reserve area smaller than the current standards must meet current design standards.

Percolation rates in excess of 120 minutes per inch demonstrate impermeable soil that should not be considered suitable for an OWTS, as this will have a high probability of premature failure.

SEPTIC TANKS

All conventional OWTS require the use of a septic tank to allow for the removal of solids in the wastewater prior to being discharged to the dispersal field. Alternative OWTS will also require a septic tank unless a settling chamber is a component of the treatment unit. For specific information on the requirements for and sizing of septic tanks, see Chapter 4 of this LAMP.

OWTS DISPERSAL SYSTEMS

Dispersal systems for conventional OWTS in San Luis Obispo County can consist of leach lines, horizontal seepage pits and vertical seepage pits. Dispersal systems for alternative OWTS can also include subsurface drip dispersal systems. See the chapters on leach line, horizontal seepage pit, vertical seepage pit and subsurface drip dispersal systems for more specifics on sizing and design criteria for those systems.

SETBACKS

Setbacks in layout designs refer to the required spacing in distance from components of the OWTS and to structures, property lines, easements, watercourses, wells, or grading. Specific setback requirements will vary based on the type of system design and site conditions and are specified in the following table.

System Component	Setback	Minimum Distance
Septic Tank	Structure	5 feet
Septic Tank	Property Line	5 feet
Septic Tank	Water Well	100 feet

Septic Tank	Leach Lines	5 feet
Septic Tank	Seepage Pits	10 feet
Leach Lines	Structure	8 feet
Leach Lines	Property Line	5 feet
Leach Lines	Water Well	100 feet [1]
Leach Lines	Leach Lines	10 feet center to center distance
Leach Lines	Seepage Pits	15 feet
Leach Lines	Water Mains (Public)	25 feet or 10 feet from edge of easement
Leach Lines	Drainage Course	50 feet from centerline or top of bank [7]
Leach Lines	Flowing Stream/Creek	100 feet from edge of flow line or top of bank
Leach Lines	Pond or Lake	100 feet from spillway elevation
Leach Lines	Water Supply Reservoir	200 to 400 feet from the high water line [2]
Leach Lines	Aqueduct	5:1 setback to pipeline [3]
Leach Lines	Road Easements	10 feet from edge of ultimate easement width [4]
Leach Lines	Cut Slopes	5:1 setback from top of cut slope [5]
Leach Lines	Private Utility Trenches	10 feet [6]
Seepage Pits	Structure	10 feet
Seepage Pits	Property Line	10 feet
Seepage Pits	Water Well	150 feet [1]
Seepage Pits	Seepage Pits	20 feet from edge of excavation
Seepage Pits	Water Mains (Public)	25 feet or 10 feet from edge of easement
Seepage Pits	Drainage Course	50 feet from centerline or top of bank [7]
Seepage Pits	Flowing Stream/Creek	100 feet from edge of flow line or top of bank
Seepage Pits	Pond or Lake	100 feet from spillway elevation
Seepage Pits	Water Supply Reservoir	200 to 400 feet from the high water line [2]
Seepage Pits	Aqueduct	5:1 setback to pipeline [3]
Seepage Pits	Road Easements	10 feet from edge of ultimate easement width [4]
Seepage Pits	Cut Slopes	5:1 setback from top of cut slope [5]
Seepage Pits	Private Utility Trenches	10 feet [6]

Footnotes:

1. The minimum setback required to a public water well is 150 feet and increases to 200 feet where the depth of the dispersal system exceeds 10 feet in depth. The minimum setback may be increased if site conditions show the minimum setback is insufficient to protect groundwater supplies.
2. Where the dispersal system is within 1200 feet of surface water intake point, the setback shall be 400 feet. Where the dispersal system is greater than 1200 feet of the surface water intake point, the setback shall be 200 feet.
3. Maximum setback of 100 feet. A reduction in setback to 50 feet may be considered with engineering to demonstrate no risk of sewage moving laterally to pipeline trench.
4. The setback may increase if the 5:1 setback to a road cut is greater than the minimum setback.
5. This maximum 100 foot setback would also be applied to the top of an eroded bank or natural slope in excess of 60%. A reduction in setback to 50 feet may be considered with engineering to demonstrate no risk of sewage surfacing on the face of the bank or slope.
6. For trenches less than 2 feet in depth, a 5:1 setback based on the trench depth can be used.
7. Setback increases to a 5:1 setback if drainage is greater than 10 foot in depth

Guidelines for Determining the Number of Bedrooms

1. Once the living room, dining room, family room, kitchen, bathrooms, and utility rooms have been established, all other rooms shall be considered as potential sleeping rooms. Dens, libraries, studies, weight rooms, sewing rooms, workshops, etc., shall be determined as bedrooms if they do not conform to the criteria listed below.
2. All other habitable rooms totaling at least seventy (70) square feet in size are to be considered bedrooms suitable for sleeping purposes, regardless of whether or not they contain closets or have access to a bathroom.
3. Rooms that open to a living room, dining room, family room, kitchen, or entry way, and have a single, un-obstructive opening (no doors) with a minimum 50% opening of the total wall space (minimum 6' wide) with archways or other acceptable means shall not be considered as bedrooms, due to the lack of personal privacy presented by the opening.
4. Rooms that can only be accessed through another bedroom are to be considered part of that bedroom, such as master suite and not an additional bedroom.
5. In the case of an ambiguous situation, where it is not clear as to whether or not a room is a bedroom, the plans may be re-reviewed on a case-by-case basis by the area supervisor for the respective district.
6. Any cases, which will require the relocation or modification of doorways, are to be reviewed and approved by the PDS to address any structural considerations such as load bearing walls. This is to be done prior to approval or sign-off by the P&B.

LOT SIZE REQUIREMENTS

P&B does not have a minimum lot size requirement for lots proposed to be created and developed based on the use of an OWTS. The average density for any subdivision of property made pursuant to the Subdivision Map Act proposing to use OWTS shall not exceed the allowable density values in the table below for a single-family dwelling (SFD), or its equivalent, without additional studies completed by a qualified professional demonstrating no adverse impacts to groundwater quality will occur. Lots created for commercial developments with flows that exceed those of a SFD will also require such studies. Where those studies show there will be impacts to groundwater quality that exceed the RWQCB Basin Plan standards, any proposed development must utilize an OWTS with supplemental

treatment as per Chapter 7 of this LAMP to mitigate those impacts or lot sizes shall be increased to eliminate any adverse groundwater impacts. Where zoning regulations require greater lot sizes, those regulations shall take precedent.

AVERAGE ALLOWABLE DENSITIES FOR SUBDIVISION LOTS[1]

Average Annual Rainfall (in/yr)	Allowable Density (acres/SFD unit)
0 – 15	2.5
>15 – 20	2.0
>20 – 25	1.5
>25 – 35	1.0
>35	0.75

CHAPTER 2

Onsite Wastewater Treatment Systems Permitting Process and Design Criteria

This Chapter is to be used for determining groundwater levels when siting and designing onsite wastewater treatment systems (OWTS) with the purpose to:

- Protect the groundwater quality by ensuring proper treatment of the sewage effluent prior to its entering into the groundwater.
- Protect the public health from failing OWTS caused by high groundwater.
- Provide a methodology for the evaluation of potential building sites using OWTS with regards to maintaining minimum groundwater separation requirements with the use of an OWTS.

The Department of Planning and Building requires that at least a five-foot separation be maintained between the bottom of a conventional OWTS disposal system and the highest anticipated groundwater level. For OWTS with supplemental treatment, the required separation can be reduced to no less than two feet. This reduction is allowed due to the level of pretreatment provided by the supplemental treatment.

Groundwater typically fluctuates seasonally depending on local geology and rainfall amounts. In certain areas dependent on imported water and OWTS, P&B has observed rising groundwater levels. Groundwater levels fall in response to drought and well extraction, and rise in response to rainfall and in some cases, increased irrigation, agriculture and residential development. P&B has observed fluctuations in groundwater elevations from a few inches to greater than twenty feet. Major fluctuations have been observed in areas such as Santa Margarita and Garden Farms areas.

OWTS failures due to high groundwater result in sewage effluent backing up into homes and surfacing on the ground creating public health hazards, and can contribute to the contamination of potable groundwater resources.

Since 1980, the County has seen several wide fluctuations in the quantity of rainfall. Over periods of time, there have been drought cycles followed by cycles of normal to above normal rainfall. During periods of normal or above normal rainfall, the 1980 groundwater policy was generally sufficient to determine if high groundwater was a concern prior to issuing a OWTS permit. Experience has shown that there are instances where the absence of groundwater in a ten, fifteen or even twenty foot deep observation boring on a lot does not guarantee that groundwater will not rise to within five feet from the bottom of the proposed OWTS during periods of normal or above normal rainfall. In some cases, the only certain way to determine depth to high groundwater on a site is to observe the groundwater depth during or immediately after an above average rainfall season. ***If groundwater has been documented to rise to a level that would violate the requirements of the RWQCB, a permit for the OWTS will not be issued.***

PROCEDURE FOR GROUNDWATER DETERMINATION FOR DISCRETIONARY PROJECTS

Subdivisions, parcel maps, boundary adjustments, and percolation tests are all projects that may require P&B to certify that each lot can support an OWTS that will not violate the RWQCB mandates. To meet this requirement, test borings and/or piezometers for monitoring groundwater in conformance with this policy shall be installed. Maps showing the location of the borings and their logs shall be submitted to P&B. The project engineer, geologist or environmental health specialist (qualified professional) must determine the actual and potential high groundwater levels in the area of the proposed OWTS at the time of submittal for review by EHS.

The qualified professional, must support their expressed conclusion that it is unlikely that seeps or springs would develop as a results of the OWTS and the high historic groundwater elevation will not encroach upon the minimum separation required between the bottom of the proposed OWTS and the highest anticipated groundwater level.

Transient high groundwater conditions (spikes) must be documented thoroughly if encountered. A written discussion by the qualified professional must be submitted to EHS along with groundwater monitoring log(s) for review and concurrence. The discovery of groundwater spikes on a lot will be evaluated on a case-by-case basis.

EHS and/or the RWQCB may require a comprehensive hydro-geologic study. This study shall include but not be limited to; data such as rainfall, total imported water use, projected water use, surface drainage, geologic formations, depth of water table and other relevant data as determined by the registered professional.

EXISTING LOT OWTS DESIGN REVIEW

1. If this site review reveals any evidence of groundwater changes, including but not limited to; plant growth, ponding water, or OWTS failures in the area, additional groundwater test borings may be required. EHS staff will specify the depth and the locations of the additional test borings in consultation with the qualified professional in charge of the project.

2. When groundwater is observed in the borings and P&B has reason to believe that groundwater could rise to an unacceptable level during the course of a normal rainfall season, monitoring may be required to determine that groundwater will not rise to an elevation that will not provide the minimum separation required from the bottom of the proposed OWTS. Monitoring, if required, must be conducted during the course of an above average annual rainfall year and/or when full groundwater recharge has occurred.

3. When groundwater is not observed in the boring but there is evidence of past high groundwater levels, such as documentation of groundwater rise on adjacent properties, monitoring may be required.

4. If there is a dry boring, there is not a known history of rising groundwater and there is no evidence of groundwater changes, including but not limited to; plant growth, ponding water, or OWTS failures in the area the project will be able to move forward.

5. The qualified professional conducting the groundwater study must support their express conclusion it is unlikely that seeps or springs would develop as a result of the OWTS and the anticipated high groundwater elevation will not encroach upon the minimum separation required to the bottom of the proposed OWTS. The supporting data shall include, but not be limited to, data on the sites topography, soils, geology, basin studies, hydro-geologic studies, and groundwater-monitoring data from the on-site observation wells through an above normal rainfall year.

TESTING PROCEDURES FOR GROUNDWATER

1. Test borings in the area of an OWTS shall extend to a minimum of 15 feet unless refusal is reached. Deeper depths may be required depending on site-specific conditions as determined by P&B or the project qualified professional. Site-specific conditions may include, but not be limited to; the proposed depth of the system, local geology, soil types encountered, elevation and terrain, features on site, evidence and/or knowledge of historic ground water levels in the area, and the anticipated fluctuation of the groundwater table in times of normal to above normal annual rainfall.

2. Test borings in the area of a vertical seepage pit or horizontal seepage pit system shall extend to at least 10 feet deeper than the bottom of the proposed pit(s).

3. Since groundwater does not always immediately flow into a test boring, P&B requires a minimum of 24 hours pass before an accurate groundwater measurement is taken. The qualified professional and/or the property owner maintain full responsibility for protecting the public from any hazards related to the test borings. It is recommended that all test borings that encounter groundwater be converted to observation wells so the groundwater conditions can be monitored over time.

4. If the qualified professional does not wish to complete the test borings as observation wells, they can cover the test boring, place safeguards around the borings to prevent unauthorized access and make an appointment for EHS staff to observe the boring at least 24-hours after the boring has been completed.

5. During periods of below normal average rainfall, or after periods of drought where there has not yet been sufficient ground water recharge, the absence of groundwater in test borings in areas where groundwater is suspect may not mean that approval to issue a septic tank permit can be granted. It may be necessary for P&B and the qualified professional to monitor the test borings for a sufficient period of time to determine where groundwater will rise to during normal to above normal rainfall.

CHAPTER 3

Percolation Test Procedure

This Chapter is to be used to establish clear direction and methodology for percolation testing in San Luis Obispo County. The objective is to determine the area necessary to properly treat and maintain sewage underground; to size the OWTS with adequate infiltration surface area based on an expected hydraulic conductivity of the soil and the rate of loading; and to provide for a system intended to allow for a long-term expectation of satisfactory performance.

All percolation testing for dispersal systems except vertical seepage pits in San Luis Obispo County shall be conducted through the use of the following procedures. The test shall be performed by or under the direct supervision of a California registered professional engineer, geologist or environmental health specialist (qualified professional)

Any deviation shall be authorized only after receiving written approval by P&B. For testing requirements for horizontal and vertical seepage pits and subsurface drip systems, see the Chapters in this LAMP covering those types of dispersal systems.

Note: Grading or clearing of brush for the purposes of completing a percolation test may require approval from Planning and Building and may require the implementation of stormwater best management practices.

TEST HOLES

Number of Test Holes

1. A minimum of four test holes is required when percolation rates are less than 60 minutes per inch (mpi).

2. A minimum of six test holes is required when the average percolation rate is more than 60 mpi. (For those soils having an average percolation rate greater than 60 mpi, see Appendix II).

3. Additional test holes may be necessary on a site specific basis for reasons that include, but are not limited to the following:
    a. Unacceptable or failed tests.
    b. Areas of the disposal field requiring defined limits for exclusion.
    c. The disposal system is located out of a concentrated area.
    d. Soil conditions are variable or inconsistent.

Depth of Testing

1. Test holes shall be representative of the dispersal system installation depth.

2. Conditions which may require testing deeper than leach line depth:
    a. Shallow consolidated rock or impervious soil layers.

b. Slope exceeds 25%.
c. Other factors as might be determined by sound geotechnical engineering practices.

Soil Classification

1. All test holes and deep borings shall have soil types described according to the American Society for Testing and Materials (ASTM) Soil Classification System (Unified).

2. All borings are to be reported, including any, which encountered groundwater or refusal. Comments about consolidation and friable characteristics are encouraged.

Location of Test Holes

Test holes shall be representative of the dispersal area demonstrating site conditions throughout the entire sewage disposal system with equal consideration of primary and reserve leach fields.

Identification of Test Holes

1. Staked and flagged so the test holes can be located.

2. Identified with:
   a. A test hole number or letter
   b. The depth of the test boring
   c. Lot/parcel number or letter if associated with a subdivision or lot line adjustment.

Drilling of Borings for Test Holes

1. Diameter of each test hole shall be a minimum of 6 inches.

2. If a backhoe excavation is used, a test hole at 12–14 inches in depth shall be excavated into the bottom of the trench.

Preparation of Test Holes

1. The sides and bottom of the holes shall be scarified so as to remove the areas that became smeared by the auger or other tool used to develop the hole.

2. All loose material should be removed from the hole.

PRESOAKING THE TEST HOLES
Procedure

1. Carefully fill the test hole with 12-14 inches of clear water.

2. Maintain 12-14 inches of clear water for a minimum of four (4) hours. After four hours, allow the water column to drop overnight. (Testing must be done within 15-30 hours after the initial four-hour presoak).

3. Overnight Option: If clay soils are present, it is recommended to maintain the 12-14 inch water overnight. A siphon can be used to maintain the supply at a constant level.

4. In highly permeable sandy soils with no clay and/or silt, the presoak procedure may be modified. If, after filling the hole twice with 12-14 inches of clear water, the water seeps completely away in less than 30 minutes, proceed immediately to Case 2, Item 3 and refill to 6 inches above the pea gravel. If the test is done the following day, a presoak will be necessary for at least an hour in order to reestablish a wetted boundary.

Saturation and Swelling

1. Saturation means that the void spaces between soil particles are full of water. This can be accomplished in a short period of time.

2. Swelling is caused by the intrusion of water into the individual soil particles are full of water. This is a slow process, especially in clay-type soil and is the reason for requiring a prolonged soaking.

Use of Inserts

1. If sidewalls are not stable or sloughing results in changing depth, the test hole may be abandoned or retested after means are taken to shore up the sides. The holes shall be re-cleaned prior to resuming the test.

2. Options for shoring or maintaining test hole stability:
   a. Hardware cloth (1/8 inch grid)
   b. Perforated pipe or containers
   c. Gravel pack (NOTE: A correction factor is necessary if a gravel pack is used. Show all calculations on the test report. See Appendix I)

DETERMINATION OF PERCOLATION RATES

Depending on the soil type and permeability, and the results of the presoak, variations in the procedures used for determining percolation rates can be allowed. Testing shall proceed based on the conditions outlined in the following cases.

Case 1 – Water remains overnight in the test hole following the four-hour presoak. (Unless an overnight siphon is used.)

Case 2 – Soil with a fast percolation rate is encountered where two columns of 12-14 inches of water percolates in less than 30 minutes for each column during the presoak.

Case 3 – No water remains in the test hole 15-30 hours after the four-hour presoak.

Case 1 Procedure

1. Adjust depth of water to 6 inches in the hole.

2. Take two (2) readings at thirty (30) minute intervals and report percolation rate as the slower of of the two readings.

Case 2 Procedure

1. Begin test 15-30 hours after presoak.

2. Fill the hole twice with 12-14 inches of water. Observe to see if each column of water seeps away in less than 30 minutes. If so, proceed with the percolation test. If not, go to Case 3.

3. Refill hole to 6 inches above the bottom.

4. Measure from a fixed reference point at ten (10) minute intervals over a period of one (1) hour to the nearest 1/16th inch. Add water at each 10-minute time interval.

5. Continue 10 minute readings as long as necessary to obtain a "stabilized" rate with the last 2 rate readings not varying more than 1/16th inch or for a duration of four (4) hours. The last water level drop will be considered in the percolation rate.

Case 3 Procedure

1. Begin test 15-30 hours after presoak.

2. Clean out the silt and mud and add 2 inches of 3/8 inch pea gravel.

3. Adjust water depth to 6 inch above the pea gravel buffer and measure from a fixed reference point at 30 minute intervals to the nearest 1/16th inch. NOTE: It is not necessary to record data points for the first hour as this is an adjustment period and a reestablishment of a wetted boundary.

4. Refill the hole as necessary between readings to maintain a 6-inch column of water over the pea gravel. If a fall of 1 inch or less is recorded, the test can continue without refilling until the next 30 minute reading interval.

5. Continue recording readings at 30 minute intervals for a minimum of four hours.

6. The last water level drop is used to calculate the percolation rate.

CALCULATIONS AND MEASUREMENTS

Calculation Example

The percolation rate is reported in minutes per inch. For example, a 30 minute time interval with a 3/4 inch fall would be as follows:

30 minutes ÷ 3/4 inch = 40 minutes per inch (mpi)

Measurement Principles

1. The time interval for readings are to reflect the actual times and are to be maintained as near as possible to the intervals outlined for the test. (10 or 30 minutes).

2. Measurements to the nearest 1/16th inch should be adjusted to the slowest rate, e.g., a reading observed between 3/8 inch and 5/16 inch (80 mpi and 96 mpi) would be reported as 96 mpi.

3. Measurements on an engineering scale (tenths of an inch) should follow the same principle, e.g., a reading observed between 0.4 inch and 0.3 inch (75 mpi and 100 mpi) would be reported as 100 mpi.

Measurements, Special Considerations

1. Measurement from a fixed reference point shall be from a platform that is stable and represents the center of the test hole.

2. Percometer devices are encouraged and required when the depth of a test hole is greater than 60 inch in depth. Accurate measurement is vital and in cases of testing deeper than 60 inch, the report shall include a description of the measurement method and how the borings were cleaned out and prepared for testing.

3. Correction Factors
    a. Void factor for gravel pack: Appendix I

REPORTS

1. All test data and required information shall be submitted on approved EHS forms with appended data or information as needed. A minimum of three copies is required.

2. Reports shall be signed with an original signature by the consultant who either performed or supervised the testing.

3. San Luis Obispo County Code, 19 requires all percolation testing to be done by a civil engineer, geologist, or environmental health specialist, registered in the State of California

4. The percolation test is only one critical factor in siting an OWTS. Site considerations may require special evaluation by a qualified professional to technically address issues such as high groundwater, steep slope, nitrate impacts, cumulative impacts, (mounding, and horizontal transmissibility).

5. Qualified professionals who employ technicians are responsible for the work performed by the technician. It is incumbent upon the qualified professional to properly train, equip, and supervise anyone performing work under his or her direction and license.

APPENDIX I

Adjustment Factor for Gravel Packed Percolation Test Holes

Calculations

- X-Section Area of Test Hole, $A_H = .25\ \pi\ D_{H2}$
- X-Section Area of Pipe, $A_P = .25\ \pi\ D_{P2}$
- X-Section Area of Gravel Pack, $A_G = A_H - A_P$
- Drainable Voids in Gravel Pack = $n\ (A_G)$ *
- Total Voids = $A_P + n\ (A_G) = A_P + n\ (A_H - A_P)$
- Adjustment Factor, AF:

$$AF = \frac{A_H}{A_P + n\ (A_H - A_P)}$$

$$AF = \frac{.25\ \pi\ D_{H2}}{.25\ \pi\ D_{P2} + n\ (.25\ \pi\ D_{H2} - .25\ \pi\ D_{P2})}$$

$$AF = \frac{D_{H2}}{D_{P2} + n\ (D_{H2} - D_{P2})}$$

Application

Adjusted Percolation Rate = MPI x AF

Typical Values

For n=35

Pipe Diameter	Hole Diameter	Adjustment Factor
4”	6”	1.57
4”	8”	1.95
4”	10”	2.20
4”	12”	2.37

APPENDIX II

Standard and Requirements for Design and Installation of OWTS in Soils with Poor Percolation Rates

In soils having percolation rates in excess of 60 mpi, the following criteria shall apply:

1. Percolation tests shall be conducted at a minimum of six (6) different locations on the site within the proposed area of the subsurface sewage disposal field.

2. There shall be a minimum of ten (10) feet of soil above any impervious formation such as rock, clay, adobe and/or water table. Fractured rock and consolidated granites will not be considered as soil. Deep testing can be required to ensure uniform conditions exist below the disposal field.

CHAPTER 4

Septic Tanks

All conventional OWTS require the use of a septic tank to allow for the removal of solids in the wastewater prior to being discharged to the dispersal field. Alternative OWTS also require a septic tank unless a settling chamber is a component of the treatment unit. This Chapter will provide the minimum design specifications and requirements for septic tanks.

1. Septic tanks must be certified by the International Association of Plumbing and Mechanical Officials (IAPMO).

2. The tank shall be watertight and possess two chambers.

3. Septic tanks shall be certified by the manufacturer to allow for burial without being water filled to allow for routine maintenance or to be used as a holding tank as needed.

4. Septic tanks shall be installed per the manufacturer's instructions.

5. The bottom of the excavation for the tank shall extend into native or compacted soils to eliminate potential settling issues.

6. Septic tank location must take into account maintenance and pumping requirements including vehicle access; and distance and elevation lift to pumper truck.

7. All tanks must have an open sanitary tee on the inlet to prevent mixing of tank contents Inlet tees must extend at least 12 inches below the liquid level.

8. Outlet tees must be uncapped and must extend at least 12 inches below the liquid level.

9. The outlet elevation shall be between 2 and 6 inches lower than the inlet elevation to ensure proper fall without a significant loss of volume.

10. Fall between the outlet of the septic tank and the dispersal field shall be continuous with a minimum fall that that ensures the outlet pipe is 4 inches higher than the top of the first siphon in a serial system or 4 inches above the top of the leach rock or other components used in the dispersal system on a level system.

11. Septic tanks with greater than 12 inches of cover must have risers to within 12 inches of finished grade. Risers and lids that are at or above grade must be watertight and lockable or require tools to be opened.

12. Septic tank risers must have a current IAPMO certification or must be reviewed and approved by EHS prior to use. Concrete risers and lids must be constructed of Type V concrete

or be protected from corrosion from sewer gases. The interior diameter of the riser shall be a minimum of eighteen (18) inches.

13. Effluent filters must be IAPMO approved if they are to be installed as part of the outlet tee.

14. Septic tanks installed in areas of vehicular traffic must be certified to withstand the proposed loads or have an engineered traffic slab installed to accommodate the proposed loads.

15. Minimum tank size is 1000 gallons.

16. Septic tanks shall be sized according to anticipated wastewater flows from the structure(s). The following standard sizes will shall apply:

a. 1-2 bedroom single family dwelling (0-250 GPD) 750 gallons
b. 3 bedroom single family dwelling (250-451GPD) 1000 gallons
c. 4 bedroom single family dwelling (450-601GPD) 1200 gallons
d. 5-6 bedroom single family dwelling (601-900GPD) 1500 gallons
d. Flows greater than 900 GPD must utilize the following formula to determine minimum tank sizing: 1125 gallons + (.75)(Flow in GPD.

17. Whenever a septic tank is pumped for service, the pumper shall completely inspect the entire septic system and complete a County of San Luis Obispo Septic Tank Inspection Report. One copy of the report shall be given to the homeowner, one copy will be kept by the pumper, and one copy shall be sent to the Department of Planning and Building within 30 days.

CHAPTER 5

Leach Line Systems

Leach lines systems are the primary means of effluent dispersal for the majority of OWTS within San Luis Obispo County and this Chapter will establish procedures for the design and construction of leach line dispersal systems. The procedures are specific for leach lines, and do not apply to other types of dispersal systems. For leach lines on slopes exceeding 20% slope, refer to the Steep Slope section of this Chapter.

PERCOLATION TEST AND DESIGN PROCEDURES

Percolation testing shall be performed in accordance with the P&B percolation test procedures found in Chapter 3 of this LAMP. Deep borings, backhoe excavations, and percolation tests are used to demonstrate that the dispersal site is located in an area of uniform soil, and that no conditions exist which could adversely affect the performance of the system or result in groundwater degradation.

1. Leach line systems are limited to soils with percolation rates of 120 minutes per inch or less. Percolation rates in excess of 120 minutes per inch are unsuitable for the installation of an OWTS dispersal system.

2. At least four percolation test holes at each leach field location should be provided to represent soil types at the depth of the proposed leach lines.

3. At least one deep boring should extend to a depth of at least 15 feet or to impermeable material but in no case shall there be less than 5 foot of unsaturated, permeable soil below the bottom of the leach line trench. For areas of suspected high groundwater, deep borings are recommended to be 20'-25' to help determine gradients during varying rainfall periods. See Chapter 2 for more information on groundwater separation requirements.

4. Backhoe excavations may be required to demonstrate uniformity of soil throughout the leach field area(s).

5. Leach line dispersal systems are limited to slopes of 25 percent or less unless the requirements under the section titled Leach Lines on Steep Slopes found later in this chapter are met.

SOIL COVER REQUIREMENTS

1. The maximum soil cover allowed over the top of the infiltrative surface is 48 inches, measured from the top of the leach rock/chamber/etc. to the ground surface.

2. The minimum cover required over the top of the infiltrative surface is 12 inches.

3. Soil cover requirements must also conform to those allowed by the manufacturer of any gravel-less/chamber design.

DIMENSIONS

1. Leach lines are to be installed according to the qualified professional's specifications for location, length, width, and depth.

2. Leach lines are to be spaced at least 10 feet apart, measured center to center.

3. Leach lines shall be installed with a width of no less than 18 inches and no more than 36 inches. Regardless of trench width or materials used, dispersal systems using leach lines shall be designed using not more than 1.5 square feet of infiltrative area per liner foot of trench as the infiltrative surface. No reduction in sizing is allowed for the use of chambers.

4. The minimum length of leach trench for a new OWTS using leach lines as the dispersal system shall be 200 feet regardless of the projected wastewater flows.

5. A 100% reserve area shall be required for all leach line systems.

MATERIALS AND CONSTRUCTION CONSIDERATIONS

1. All piping and materials used in leach line systems including gravel-less/chamber systems must have IAPMO approval and must be approved by P&B prior to installation.

2. Leach lines that utilize gravel shall be filled with clean, washed leach line rock to a point at least 4 inches above the top of a 4 inch perforated pipe and shall have a minimum of 12 inches of gravel below the pipe. The rock shall be graded at 1 to 1.5 inches in size and shall be covered with straw, untreated building paper or a geotextile fabric prior to backfill to prevent the infiltration of soil into the rock.

3. Where multiple leach lines are proposed on sloping ground, a serial dam and siphon must be used to connect the leach lines.

4. Leach lines may not be placed under impermeable surfaces. Leach lines that are later covered by impermeable surfaces may not be considered as viable for purposes of determining primary and reserve area requirements.

5. Leach line trenches shall be installed with the trench bottom and materials used being level to within 2 inches per 100 feet.

LEACH LINES ON STEEP SLOPES

The following requirements must be met for the installation of leach line trenches on slopes exceeding 20 percent without necessitating the grading of terraces. The design parameters are applicable only to slopes exceeding 20 percent and are not intended to be used in any other situation.

1. The maximum slope allowed for leach line trenches is 40 percent.

2. All leach lines on steep slopes shall be installed in 5 foot deep trenches with 12 inches of leach rock below the leach pipe or with approved chambers or other gravel-less system.

3. The design of disposal systems on steep slopes requires the experience and expertise to address conditions relative to soil, slope stability, and subsurface conditions which require professional judgment and technical knowledge. Designs for steep slope systems will only be approved when submitted by a qualified professional registered in the State of California.

4. Testing must provide data representative of the entire disposal area and demonstrate that conditions are uniform below the entire disposal area. The minimum testing required is:

a. Six percolation tests at a depth equal to the proposed trench depth.
b. Two percolation tests five feet below the proposed trench depth.
c. Percolation testing must show rates of 120 minutes per inch or less.
d. At least two soil profile borings demonstrating uniform conditions throughout the disposal area to a depth of 10 feet below the proposed trench depth.

5. Design reports must include the following:

a. Cross section(s) hillside soil profile(s).
b. Detailed boring logs of all test holes and borings.
c. Scaled layouts and profiled designs based on accurate topography.
d. Any grading proposed on the site in the disposal area.
e. A slope stability report or statement from a qualified professional.

6. Any grading, proposed to create a stable work area for trench installation, may be subject to review for conflict with Planning and Development Services (PDS). It is strongly recommended that contact be made with PDS before any grading occurs.

SIZING

1. Residential leach line systems shall be sized based on the chart located at the end of this policy which shows the length of leach line as a function of percolation rate and the number of bedrooms for a single-family dwelling.

2. Non-residential leach line systems shall be calculated by a qualified professional using expected peak wastewater flows.

LEACH LINE TRENCH LENGTH BASED ON PERCOLATION TEST RATE

Perc Rate	Number of Bedrooms						Perc Rate	Number of Bedrooms					
MPI	**1**	**2**	**3**	**4**	**5**	**6**	**MPI**	**1**	**2**	**3**	**4**	**5**	**6**
1	200	200	240	270	280	300	**31**	280	350	420	480	535	595
2	200	200	240	270	280	300	**32**	280	355	430	480	535	595
3	200	200	240	270	280	300	**33**	290	360	430	490	545	605
4	200	220	260	290	300	310	**34**	290	360	440	490	545	605
5	200	240	290	320	320	340	**35**	290	365	440	500	555	615
6	200	250	300	340	350	360	**36**	300	370	440	500	555	615
7	210	260	310	350	370	380	**37**	300	370	450	500	555	615
8	210	265	320	360	390	400	**38**	300	375	450	510	565	625
9	220	270	320	360	400	410	**39**	300	380	460	510	565	625
10	220	275	330	370	410	420	**40**	300	380	460	520	575	635
11	220	280	340	380	420	430	**41**	310	385	460	520	575	635
12	230	285	340	380	430	440	**42**	310	390	470	530	585	645
13	230	290	350	390	430	450	**43**	310	390	470	530	585	645
14	235	295	350	400	440	460	**44**	310	395	480	540	595	655
15	240	300	360	400	450	470	**45**	320	400	480	540	595	655
16	240	300	360	410	450	490	**46**	320	400	480	540	595	655
17	240	305	370	410	460	500	**47**	320	405	490	550	605	665
18	250	310	370	420	460	510	**48**	330	410	490	550	605	665
19	250	310	380	420	470	520	**49**	330	410	500	560	615	675
20	250	315	380	430	470	520	**50**	330	415	500	560	615	675
21	260	320	380	430	480	530	**51**	340	420	500	560	615	675
22	260	320	390	440	480	530	**52**	340	420	510	570	625	685
23	260	325	390	440	490	550	**53**	340	425	510	580	635	695
24	260	330	400	450	500	560	**54**	340	430	520	580	635	695
25	260	330	400	450	500	560	**55**	340	430	520	580	635	695
26	270	335	400	450	510	570	**56**	350	435	520	590	645	705
27	270	340	410	460	515	575	**57**	350	440	530	590	645	705
28	270	340	410	460	515	575	**58**	350	440	530	600	655	715
29	270	345	420	470	525	585	**59**	350	445	540	600	655	715
30	280	350	420	470	525	585	**60**	360	450	540	610	665	725

LEACH LINE TRENCH LENGTH BASED ON PERCOLATION TEST RATE

Perc Rate	Number of Bedrooms						Perc Rate	Number of Bedrooms					
MPI	**1**	**2**	**3**	**4**	**5**	**6**	**MPI**	**1**	**2**	**3**	**4**	**5**	**6**
61	370	460	550	620	690	740	**91**	680	770	860	930	980	1020
62	380	470	560	630	680	720	**92**	695	785	875	945	995	1035
63	390	480	570	640	690	730	**93**	710	800	890	960	1010	1050
64	400	490	580	650	700	740	**94**	725	815	905	975	1025	1065
65	420	500	580	660	710	750	**95**	740	830	920	990	1040	1080
66	420	510	600	670	720	760	**96**	755	845	935	1005	1055	1095
67	430	520	610	680	730	770	**97**	770	860	950	1020	1070	1110
68	440	530	620	690	740	780	**98**	785	875	965	1035	1085	1125
69	450	540	630	700	750	790	**99**	800	890	980	1050	1100	1140
70	460	550	640	710	760	800	**100**	815	905	995	1065	1115	1155
71	470	560	650	720	770	810	**101**	830	920	1010	1080	1130	1170
72	480	570	660	730	780	820	**102**	845	935	1025	1095	1145	1185
73	490	580	670	740	790	830	**103**	860	950	1040	1110	1160	1200
74	500	590	680	750	800	840	**104**	875	965	1055	1125	1175	1215
75	510	600	690	760	810	850	**105**	890	980	1070	1140	1190	1230
76	520	610	700	770	820	860	**106**	905	995	1085	1155	1205	1245
77	530	620	710	780	830	870	**107**	920	1010	1100	1170	1220	1260
78	540	630	720	790	840	880	**108**	935	1025	1115	1185	1230	1270
79	550	640	730	800	850	890	**109**	950	1040	1130	1200	1250	1290
80	560	650	740	810	860	900	**110**	965	1055	1145	1215	1265	1305
81	570	660	750	820	870	910	**111**	980	1070	1160	1230	1280	1320
82	580	670	760	830	880	920	**112**	995	1085	1175	1245	1295	1335
83	590	680	770	840	890	930	**113**	1010	1100	1190	1260	1310	1350
84	600	690	780	850	900	940	**114**	1025	1115	1205	1275	1325	1365
85	610	700	790	860	910	950	**115**	1040	1130	1220	1290	1340	1380
86	620	710	800	870	920	960	**116**	1055	1145	1235	1305	1355	1395
87	630	720	810	880	930	970	**117**	1070	1160	1250	1320	1370	1410
88	640	730	820	890	940	980	**118**	1085	1175	1265	1335	1385	1425
89	650	740	830	900	950	990	**119**	1100	1190	1280	1350	1390	1440
90	665	755	845	915	965	1005	**120**	1120	1210	1300	1370	1420	1460

CHAPTER 6

Vertical Seepage Pit Systems

Vertical seepage pits are a type of dispersal system allowed in limited areas of San Luis Obispo County with specific requirements on their use. This Chapter will provide the requirements to allow for the use of vertical seepage pits as well as the procedures for their design and construction.

LOCATIONS ALLOWED

1. Existing Lots – Any lot previously approved for the use of a vertical seepage pit must meet all current requirements found in this LAMP to be considered for development based on the use of a vertical seepage pit.

2. New Lots – Any lot not previously approved for the use of a vertical seepage pit will not be approved unless:

   a.) It is located in an area of sedimentary soils, and groundwater is known to be more than 100' below the surface of the pit.

   b.) seepage pit system is provided with supplemental treatment whenever the percolation rates are faster than 20 mpi, or groundwater is less than 20 feet below the bottom of the pit.

3. Vertical seepage pits will not be approved for use in areas with interior granitic formations, or in serpentine, Franciscan, formations. The presence of fractured rock aquifers makes the use of vertical seepage pits in these areas potentially deleterious to know beneficial water quality.

PERCOLATION TEST PROCEDURES

All vertical seepage pits for new construction will require percolation testing by a qualified professional certified to perform percolation tests in San Luis Obispo County. A waiver of testing can be considered where adequate information exists as to soil types, depth and permeability. Percolation testing for vertical seepage pits shall be completed per the following guidelines.

1. A 12 to 48 inch diameter test hole shall be excavated to a depth of at least 10 feet deeper than the proposed installation depth.

2. A minimum 10 foot separation between the bottom of the vertical seepage pit and the anticipated high groundwater level is required.

3. Boring logs shall be recorded and included with all test reports indicating soil strata depths and types and visual classification according to the unified soil classification system along with any groundwater encountered.

4. The over drill must be checked for the presence of groundwater a minimum of 24 hours after the completion of the test boring to allow time for groundwater to stabilize in the hole.

5. After the groundwater reading is recorded, the test hole shall be backfilled to a depth 10 feet above the bottom of the test hole or the groundwater level whichever is shallower.

6. The pit shall be filled with water to the cap depth and a continuous pre-soak shall be maintained at the proposed cap level for a minimum 8-hour period. In highly permeable soils when cap levels cannot be maintained during pre-soak, the test shall be conducted at a depth no higher than the pre-soak level which was attained. Document the pre-soak attempt with gallons of water used. In no case shall less than 5,000 gallons of water be used within a 1 hour period in the attempted pre-soak when the cap level cannot be maintained. The depth of the test shall be noted on the boring log and in no case shall the sidewall of permeable soil below the cap level be less than ten foot.

7. Upon completion of the pre-soak period, fill the pit to cap level and determine uniformity of soil by measuring the falling head. Distance to the water level shall be measured at 15 minute intervals, or more frequently if needed, until the drop stops or the pit empties. A graph of the drop in water level shall be attached to all proposals submitted by the qualified professional. If non-uniform rates persist, the soil will not be considered uniform and the tests discontinued as they will not be approved by EHS.

8. If the procedure in Item no. 4 demonstrates uniform soil, proceed with a two-hour static head or falling head capacity test.

a. Static Head – The pit shall be filled with water to the cap depth and the water column shall be maintained at that level for two hours. The amount of water added to maintain this level must be documented. The 24-hour capacity is determined by multiplying by 12. Adjustment to a four foot diameter pit is made if a lesser size test hole is used.

b. Falling Head – The pit shall be filled with water to the cap depth and the column of water shall be allowed to drop for a two hour period. The distance dropped shall be measured and the amount of water absorbed determined. This amount is multiplied by 12 to determine the 24-hour capacity. Adjustment to a four foot diameter pit is made if a lesser size test hole is used.

9. The minimum capacity for a new OWTS using vertical seepage pits as the dispersal system shall be 5 times the volume of the required septic tank or 5000 gallons per day whichever is greater. All individual vertical seepage pit shall have a minimum capacity of 1,667 gallons per day.

10. Each pit must meet these minimum criteria to be acceptable. The qualified professional may include safety factors as he feels the situation warrants.

11. It shall be the responsibility of the qualified professional to maintain all test holes or pits in a safe manner prior to backfill or capping to prevent a hazard or accident.

DIMENSIONS AND CONSTRUCTION REQUIREMENTS

1. Vertical seepage pits shall be installed according to the qualified professional's specifications for location, depth and cap depth.

2. The pit excavation shall be four feet in diameter.

3. The sidewall depth below the cap shall not be less than 10 feet.

4. The minimum depth to the top of the infiltrative surface allowed is 2 feet. This depth is also known as the cap depth. There is no maximum cap depth but documentation must be provided to justify any cap depth greater than 5 feet.

5. The maximum slope allowed for the use of vertical seepage pits is 40 percent. Slopes that exceed 25% will require additional engineering and design detail as required to address the risk of effluent surfacing on the slope recognizable as sewage as well as slope stability issues. Slopes that exceed 25% will, in most cases, require a terrace design or grading to allow for drilling access. Any grading shall be in accordance with any permit requirements for brushing, clearing, and grading from any other agency.

6. All pits must be filled with clean washed leach line rock to the cap depth. The rock shall be graded at 1 to 1.5 inches in size and shall be covered with straw, untreated building paper or a geotextile fabric prior to backfill to prevent the infiltration of soil into the rock.

7. A 4 inch Schedule 40 pipe shall be installed from the ground surface to the bottom of each seepage pit for clean-out, pumping and verification of the total pit depth. The pipe shall have perforations from the cap depth to the bottom of the pit and be of solid construction from the cap depth to the ground surface. A screw fit cap must be placed on top of the riser to allow access.

8. Where more than one vertical seepage pit is proposed for the primary or reserve system, a serial dam and siphon must be used to connect the pits.

CHAPTER 7

Onsite Wastewater Treatment Systems with Supplemental Treatment

OWTS with supplemental treatment (STS), also known as alternative OWTS, are OWTS that includes some type of advanced treatment in addition to the primary treatment that occurs in a septic tank used with a conventional OWTS. STS are used to overcome specific site constraints generally having to do with high groundwater or shallow soils and provide the additional treatment necessary that will not be provided in the soil. Examples include aerobic treatment units, sand or textile filters and mound systems. This Chapter will provide the procedures for the design, construction, operation and maintenance of STS within San Luis Obispo County

DESIGN CRITERIA

1. All supplemental treatment components of a STS must be certified by the National Sanitation Foundation (NSF) to meet the minimum requirements of NSF Standard 40 or must meet standards approved by P&B and the RWQCB. STS utilizing nitrogen reduction components shall achieve a minimum 50 percent nitrogen reduction, when comparing the 30-day average influent concentration to the 30-day average effluent concentration.

2. Advanced or alternative OWTS components designed to perform disinfection shall provide sufficient pretreatment of the wastewater so that effluent from the supplemental treatment components does not exceed a 30-day average total suspended solids of 30 milligrams per liter and shall further achieve an effluent fecal coliform bacteria concentration less than or equal to 200 Most Probable Number (MPN) per 100 milliliters.

3. Percolation testing, soil depth evaluations and groundwater elevation determinations shall be performed by a qualified professional. Percolation testing will be performed at the proposed installation depth of the dispersal field and shall follow the procedures stated in Chapter 3 of this LAMP.

4. Treated effluent from all STS shall be discharged to a subsurface dispersal system consisting of leach lines, vertical seepage pits, horizontal seepage pits, or pressurized drip dispersal systems.

5. System sizing for dispersal systems that utilize leach lines, vertical seepage pits, and horizontal seepage pits shall be the same as those used for conventional OWTS.

6. Pressurized drip dispersal systems shall be designed and installed per the manufacturer's recommendations and the guidelines in the following sections. Calculations to size the drip dispersal system shall use the application rates found in the table at the end of this Chapter.

7. A minimum 2 foot separation between the bottom of the dispersal system to the highest anticipated level to which groundwater could be expected to rise is required for STS.

8. A minimum of 2 foot of permeable soil must exist below the bottom of the STS dispersal system.

9. The STS shall be equipped with a visual and audible alarm as well as a two way telemetric alarm that alerts the owner, qualified service provider and EHS of system malfunctions. The telemetric alarm shall only be waived if the property owner demonstrates to the satisfaction of P&B that a telemetric alarm is impracticable.

CONSTRUCTION REQUIREMENTS FOR DRIP DISPERSAL SYSTEMS

The construction requirements for dispersal systems consisting of leach line, horizontal seepage pit and vertical seepage pit systems can be found in the specific Chapters in this LAMP for to those systems. The construction requirements for pressurized drip dispersal systems shall be as follows.

1. An STS must to be installed by a licensed qualified service provider certified to install the specific STS proposed and the system must be installed according to the qualified professional's specifications for location, components, size and depth.

2. The natural soil cover over a drip dispersal system shall be at least 6 inches but no greater than 12 inches.

3. The area of the drip dispersal system shall be planted with appropriate vegetation to allow for uptake of nutrients from the wastewater.

4. The drip dispersal system shall be designed and maintained to reduce orifice clogging and root intrusion.

5. The drip dispersal system shall be designed, located and maintained to prevent vehicular traffic over it.

6. The setbacks required between drip dispersal systems and other components of the OWTS as well as structures, property lines, easements, watercourses, wells, or grading shall be the same as required for leach lines with the exception that the setback to structures and property lines can be reduced to 2 feet. See the setback table found in Chapter 1 of this LAMP for the complete list of setbacks.

7. The maximum slope allowed for the installation of a drip dispersal system shall be 40 percent.

8. Drip dispersal systems are pressure distribution systems and head loss calculations shall be provided to ensure proper hydraulic pressure at the emitter.

9. Drip dispersal system emitter lines shall be designed as a continuous loop circuit with no dead-ends.

10. Vacuum release valves shall be installed at the highpoint of the emitter lines.

11. The maximum emitter longitudinal spacing on an emitter line shall be 2 feet. The maximum spacing between adjacent emitter lines in an absorption bed configuration shall be 2 feet.

12. Drip dispersal systems shall be time dosed over a 24-hour period. Demand control dosing shall override timed dosing in periods of flow where timed dosing cannot accommodate the excessive flow.

13. Drip dispersal systems shall be designed to have a minimum operating pressure at the emitter head of 10 pounds per square inch (psi, a maximum operating pressure of 45 psi, a maximum system operation pressure of 60 psi, and a maximum discharge rate per emitter of 1.5 gallons per hour.

14. All drip dispersal systems shall incorporate an automatic mechanism for backwashing or flushing the drip lines and filters.

15. Septic tanks, pump chambers or other related components of an STS including risers shall undergo a water tightness test at the site of the installation. Anti-floatation devices shall be utilized as needed.

16. The STS shall include a petcock on the dosing pump discharge line or other suitable location as agreed upon by P&B for effluent sampling.

17. All components of the STS shall be certified in writing by the qualified professional who designed the STS that the installation was completed per the approved design.

OPERATION AND MAINTENANCE

1. All STS require an annual operating permit, issued by P&B. The annual operating permit will define the monitoring and maintenance requirements as specified by the manufacturer and/or qualified professional who designed the system.

2. An operation and maintenance manual shall be provided by the manufacturer or qualified professional that includes the qualified professionals name, address, telephone number, and business and professional license number. A copy shall be maintained at the site and shall be available to the qualified service provider.

3. All STS must be maintained by a qualified service provider and a maintenance contract must be kept in place throughout the life of the STS.

4. All STS require, at a minimum, biannual inspections by the qualified service provider to ensure proper operation and maintenance of the system. Copies of the inspection results shall be provided to the P&B within 30 days of the inspection being completed.

5. The drip dispersal system shall be flushed once every three months for the first year or until vegetation is established, whichever occurs first. Flushing shall occur every six months thereafter.

6. The qualified service provider shall be responsible for the following:

a. Assessing the STS to determine operational status.
b. Performing routine activities required to keep the system operational.
c. Responding to emergencies in a timely manner.
d. Collecting and recording information regarding operational status of treatment components and recommending timely maintenance, replacement, or pumping of various components as required.
e. Monitoring system performance through collection and analysis of effluent samples when appropriate.
f. Reporting system operational status/or system performance to the property owner and County P&B.
g. Serving as an informational resource for the property owner.

7. All failures, malfunctions, service requests, alarms, or other instances where an STS requires the attention of a qualified service provider shall be reported to P&B within 72 hours of the incident occurring.

8. Failure to maintain an annual operating permit or provide the biannual inspection results to P&B will result in enforcement action and may result in condemnation of the structure.

APPLICATION RATES AS DETERMINED FROM STABILIZED PERCOLATION RATES

Percolation Rate (min/inch)	Application Rate (gal/day/ft2)	Percolation Rate (min/inch)	Application Rate (gal/day/ft2)	Percolation Rate (min/inch)	Application Rate (gal/day/ft2)
1	1.2	31	0.522	61	0.197
2	1.2	32	0.511	62	0.194
3	1.2	33	0.5	63	0.19
4	1.2	34	0.489	64	0.187
5	1.2	35	0.478	65	0.184
6	0.8	36	0.467	66	0.18
7	0.8	37	0.456	67	0.177
8	0.8	38	0.445	68	0.174
9	0.8	39	0.434	69	0.17
10	0.8	40	0.422	70	0.167
11	0.786	41	0.411	71	0.164
12	0.771	42	0.4	72	0.16
13	0.757	43	0.389	73	0.157
14	0.743	44	0.378	74	0.154
15	0.729	45	0.367	75	0.15
16	0.714	46	0.356	76	0.147
17	0.7	47	0.345	77	0.144
18	0.686	48	0.334	78	0.14
19	0.671	49	0.323	79	0.137
20	0.657	50	0.311	80	0.133
21	0.643	51	0.3	81	0.13
22	0.629	52	0.289	82	0.127
23	0.614	53	0.278	83	0.123
24	0.6	54	0.267	84	0.12
25	0.589	55	0.256	85	0.117
26	0.578	56	0.245	86	0.113
27	0.567	57	0.234	87	0.11
28	0.556	58	0.223	88	0.107
29	0.545	59	0.212	89	0.103
30	0.533	60	0.2	90-120	0.1

CHAPTER 8

Onsite Wastewater Treatment Systems Requiring Corrective Action

All OWTS have the potential to fail due to age, misuse or improper design and the failure may result in surfacing effluent, wastewater being discharged to the ground surface or wastewater backing up into plumbing fixtures. These failures will require corrective action to mitigate any risk to public health or contamination of the environment. This Chapter will detail the corrective action that will be required in the event an OWTS fails and enforcement actions that will be taken if the corrective action is not completed within acceptable time frames.

CORRECTIVE ACTION REQUIREMENTS

1. P&B will complete an investigation within 24 hours to determine the validity of the complaint or other notification of a failing OWTS.

2. Any OWTS that is found to be failing shall have a notice of violation issued to the property owner requiring action to eliminate the immediate health hazard through pumping of the septic tank by a licensed sewage hauler or elimination of wastewater flows to the failing OWTS. The notice of violation will also require a repair to be completed to the OWTS as needed within a reasonable time frame.

3. The proposed repair shall be evaluated by P&B to ensure it meets the minimum design requirements of this LAMP or is in substantial conformance to the greatest extent practicable.

4. Groundwater separation requirements to the bottom of the dispersal system and the highest anticipated groundwater level for repairs shall be as follows:
   a. 5 foot for conventional OWTS
   b. 2 foot for alternative OWTS with supplemental treatment
   c. Less than 2 foot separation cannot be allowed through this LAMP and will require a waste discharge permit through the RWQCB.

5. The repair shall be completed under permit and inspection by P&B

6. Failure to complete the required corrective action within the time frames given will result in additional enforcement action which may include condemnation of the structure for immediate health hazards.

SUBSTANDARD SYSTEMS

All OWTS within San Luis Obispo County that do not meet minimum design requirements of this LAMP shall be deemed substandard. Sites with substandard OWTS shall be prohibited from having future additions or modifications to the property that would potentially increase wastewater flow to the OWTS or decrease the amount of usable area available for the OWTS.

Onsite Wastewater Treatment Systems in Degraded Basins

If the Central Coast Regional Water Quality Control Board identifies a groundwater basin or sub-basin in the County where the use of OWTS is causing or contributing to exceedances of nitrate or pathogen maximum contaminant levels (MCL'S) San Luis Obispo County will develop an Advanced Groundwater Management Program (AGMP) in close consultation with and approved by the Central Coast Regional Water Quality Control Board. The AGMP will require supplemental treatment for all new and replacement systems in such areas; mandatory, routine inspections and maintenance; connection to public sewers; shallow groundwater monitoring; or other appropriate actions. The supplemental treatment standards will be equivalent to Tier 3 requirements to the greatest extent practicable. The requirements for existing systems will be equivalent with tier 4 of the Policy. The County will require conformance with current standards, including supplemental treatment standards, to the greatest extent practicable or as specified in the AGMP. Variances are not allowed for the requirements stated in sections 9.4.1 through 9.4.9 of the Policy.

Advanced Protection Management Plan

If a water body in the county is designated as "impaired water body," San Luis Obispo County will develop an Advanced Protection Management Program (APMP) in accordance with the established TMDL. In the absence of an approved TMDL, the APMP will be developed in close consultation with the Central Coast Regional Water Quality Control Board and may include, but not limited to, requirements for supplemental treatment for existing septic systems; mandatory, routine inspections as determined by the Central Coast Regional Water Quality Control Board in order to be consistent with the Policy; and / or shallow groundwater monitoring. In the absence of a TMDL or an APMP approved by the Central Coast Regional Water Quality Control Board, the provisions of Tier 3 of the Policy shall apply to OWTS adjacent to water body segments listed in Attachment 2 of the Policy.

CHAPTER 9

Onsite Wastewater Treatment System Use Limitations

P&B's oversight of OWTS is limited to those systems as defined in this LAMP. Limitations exist for the use of OWTS related to the amount and type of wastewater flows that will be generated, types of systems, availability of public sewer and setbacks to public water supplies. The following are not allowed to be authorized by P&B and any such system or deviations can only be approved by the RWQCB.

1. Cesspools of any kind or size.

2. Hollow Seepage Pits

3. OWTS receiving a projected flow over 5,000 gallons per day.

4. OWTS receiving a projected flow over 3,500 gallons per day must either utilize a supplemental treatment system certified by the NSF or a third party tester as capable of achieving 50 percent total nitrogen reduction when comparing the 30-day average influent to the 30-day average effluent; or submit an evaluation to the County P&B completed by a qualified professional that determines whether or not the discharge from the OWTS will adversely affect groundwater quality.

5. OWTS that utilize any form of effluent disposal that discharges on or above the post installation ground surface such as sprinklers, exposed drip lines, free-surface wetlands, or a pond.

6. Slopes greater than 30 percent without a slope stability report approved by a registered professional.

7. Decreased leaching area for IAPMO certified chamber dispersal systems using a multiplier less than 0.70.

8. OWTS utilizing supplemental treatment without requirements for periodic monitoring or inspections.

8. OWTS dedicated to receiving significant amounts of wastes dumped from RV holding tanks.

9. Separation of the bottom of dispersal system to groundwater less than 2 feet, except for vertical seepage pits, which shall not be less than 10 feet.

10. Installation of new or replacement OWTS where public sewer is available. Public sewer availability is defined as follows:

a. The property on which the structure is located abuts a public sewer.
b. The property is within the boundaries of the sewer district or annexation has been approved by the sewer district.

c. No easements must be obtained to access the sewer line.

A waiver of the connection to sewer can be considered where such sewer is located more than 200 feet from the building or plumbing stub out, the connection fees and construction costs are greater than twice the total cost of the OWTS and an OWTS can be installed that will meet the minimum requirements of this LAMP and not affect groundwater or surface water to a degree that makes it unfit for drinking or other uses.

11. Except as provided for in Item 11 and 12, new or replacement OWTS with minimum horizontal setbacks less than any of the following:

a. 150 feet from a public water well where the depth of the effluent dispersal system does not exceed 10 feet in depth.
b. 200 feet from a public water well where the depth of the effluent dispersal system exceeds 10 feet in depth.
c. Where the effluent dispersal system is within 600 feet of a public water well and exceeds 20 feet in depth, the horizontal setback required to achieve a two-year travel time for microbiological contaminants shall be evaluated by a qualified professional. In no case shall the setback be less than 200 feet.
d. Where the effluent dispersal system is within 1,200 feet from a public water system's surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 400 feet from the high water mark of the reservoir, lake or flowing water body.
e. Where the effluent dispersal system is located more than 1,200 feet but less than 2,500 feet from a public water system's surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 200 feet from the high water mark of the reservoir, lake or flowing water body.

12. For replacement OWTS that do not meet the horizontal separation requirements in Item 11 above, the replacement OWTS shall meet the horizontal separation to the greatest extent practicable. In such case, the replacement OWTS shall utilize supplement treatment and other mitigation measures, unless the permitting authority finds that there is no indication that the previous system is adversely affecting the public water source, and there is limited potential that the replacement system could impact the water source based on topography, soil depth, soil texture, and groundwater separation.

13. For new OWTS, installed on parcels of record existing before May 13, 2013 which is the effective date of the State's OWTS Policy, that cannot meet the horizontal separation requirements in Item 10 above, the OWTS shall meet the horizontal separation to the greatest extent practicable and shall utilize supplemental treatment for pathogens as specified in Section 10.8 of the State's OWTS Policy and any other mitigation measures prescribed by San Luis Obisop County Environmental Health Services Department (EHS).

14. Winery Process Wastewater for any winery producing more than 10,000 cases per year.

CHAPTER 10

Data Collection/Reporting/Notifications

As a condition of P&B oversight of OWTS within San Luis Obisoo County, P&B has certain responsibilities related to data collection and reporting to the Central Coast Basin Regional Water Quality Control Board (RWQCB) as well as in some instances to the owners of water systems and the State Water Resources Control Board Division of Drinking Water (SWRCB). This Chapter will detail the data that must be collected and the procedure for reporting to RWQCB and notifications to owners of water systems and SWRCB.

REPORTING TO RWQCB

On an annual basis, P&B will collect data for and report in tabular spreadsheet format the following information. A copy of the report will be provided to the Central Coast RWQCB.

1. The number and location of complaints pertaining to OWTS operation and maintenance, and identification of those which were investigated and how they were resolved.

2. The number, location and description of permits issued for new and replacement OWTS and under which Tier the permit was issued. Also include the design flow of the OWTS. The Tier designations can be found in the State Water Board's OWTS Policy.

3. The number, location and description of permits issued for OWTS where a variance from the approved LAMP was granted.

4. The applications and registrations issued for sewage haulers as part of the local septic tank cleaning registration program.

In addition, P&B must maintain a water quality assessment program to determine the general operation status of OWTS and to evaluate the impact of OWTS discharges, and assess the extent to which groundwater and local surface water quality may be adversely impacted. The assessment program will include monitoring and analysis of water quality data, review of complaints, failures and OWTS inspections. The water quality data can be obtained from the flowing sources:

a. Random well samples.
b. Well samples taken to establish a well as a "potable source".
c. Routine water samples taken by community water systems.
d. Beach and bay water quality testing.
e. Any other sampling data deemed relevant or necessary for the protection of ground/surface water supplies.

A summary of the data shall be submitted on an annual basis on or before February 1st. An evaluation of the monitoring program and an assessment of whether water quality is being impacted by OWTS shall be submitted every 5 years.

NOTIFICATIONS TO OWNERS OF WATER SYSTEMS AND SWRCB

Existing or proposed OWTS in close proximity to public water wells and surface water drinking water supplies have some potential to cause an impact on the water quality from that water source and the owner of that system or SWRCB, if the owner of the system cannot be identified, will be notified under the following conditions.

1. Prior to issuance of a permit to install a new or replaced OWTS that is within a horizontal sanitary setback to the public well; or within 1,200 feet of an intake point for a surface water treatment plant for drinking water, in the drainage catchment in which the intake point is located, or located such that it may impact water quality at the intake point, to allow the water system owner to provide comments to EHS. Notification will be done electronically or in writing by EHS with a copy of the permit application that includes:

    a. A topographical plot plan for the parcel showing the OWTS components, property boundaries, proposed structures, physical address, and name of property owner.
    b. The estimated wastewater flows, intended use of proposed structure generating the wastewater, soil data, and estimated depth to seasonally saturated soils.
    c. An advisement that the public water system owner or SWRCB shall have 15 days from receipt of the permit application to provide recommendations and comments to EHS.

2. Upon discovery of a failing OWTS that is within 150 feet of a public water well, 200 feet of the high water mark of a surface water drinking water supply where the dispersal system is within 1,200 feet of the water system's surface water intake, within the catchment of the drainage and located such that it may impact water quality at the intake point, or 400 feet of the high water mark of a surface water drinking water supply where the dispersal system is between 1,200 and 2,500 feet of the water system's surface water intake, within the catchment of the drainage and located such that it may impact water quality at the intake point. Notification will be done electronically or in writing and will include proposed corrective action that will be taken to mitigate the failure.

CHAPTER 11

Onsite Wastewater Treatment Systems near Impaired Water Bodies

Existing, new and replacement OWTS that are near impaired water bodies may be addressed by a TMDL and its implementation program, or special provisions contained in a LAMP. If there is no TMDL or special provisions, new or replacement OWTS within 600 feet of impaired water bodies listed in Attachment 2 of the State's OWTS Policy must meet the applicable specific requirements found in Tier 3 of the State's OWTS Policy.

Currently, there are no impaired water bodies in San Luis Obispo County listed in Attachment 2 of the State's OWTS Policy. At such time as an impaired water body is listed, P&B will follow the applicable specific requirements found in Tier 3 of the State's OWTS Policy or develop and obtain approval from the RWQCB of its own Advanced Protection Management Program

CHAPTER 12

SEPTAGE MANAGEMENT

1. The Septage Pumping Program is overseen by San Luis Obispo County Environmental Health Services Department. All septic tank waste shall be handled, hauled and disposed of in accordance with County Code Title 8, and all applicable State Laws.

2. All septic pumpers in San Luis Obispo County shall have a current permit with the Department of Environmental Health Services.

3. Whenever a septic tank is pumped, all septage shall be removed from both sides of the tank and transported to a facility approved for the disposal of septage.

4. Septage shall never be released on the surface of the ground, into any sewer manway or cleanout, or into any storm drain.

CHAPTER 13

ENFORCEMENT

San Luis Obispo County has an established ordinance and procedure related to OWTS code enforcement. Initiating enforcement action is generally used only when all other means to correct a problem or a violation have failed. When there is a threat to public health and safety, enforcement action must be implemented immediately. The circumstances or conditions that would result in the building division initiating enforcement are described below.

Failure to Obtain a Permit

1. San Luis Obispo County Ordinance Title 19 chapter 7 requires that a permit be obtained before an OWTS is constructed, repaired, modified or abandoned. It further states that it is unlawful to cover, conceal or put into use an OWTS or any part thereof, without having first obtained an inspection and final approval from the building division.

2. When the building division is made aware of or discovers an OWTS being installed, modified, repaired or abandoned without a permit, and the work is in progress, a Notice of Violation or Stop Work Notice will be issued to the property owner directing all work cease and that he/she obtain the appropriate permit. All information required as part of the application as well as the established fee, shall be submitted before work may commence.

3. Section 105.030 of Title1 gives the building department authority to charge administrative fines for violations of Title 19 Chapter 7. Therefore, if a property owner fails to take remedial action after receiving a second Notice of Violation, the building department will fine the owner $100.00.

4. The goal of an enforcement action is to correct a violation. The assessment of a fine does not end the matter as abatement of the violation is still required. A continued failure to correct the violation would result in another enforcement action leading to a potential second fine or the initiation of civil action

5. An OWTS that was installed, modified, repaired or abandoned without benefit of a permit and inspection has no legal standing. Should the building official discover or be made aware of a system that was constructed or modified, the property owner will be required to submit the standard application and supporting documents (percolation tests, soil evaluation etc.) to obtain a permit. The owner will also have to provide evidence that the work met current standards or repeat the work in order to satisfy the building official that the system meets all applicable provisions of the ordinance.

6. OWTS installed before 1958 are considered as prior non-conforming and may be used as long as it continues to function as intended except when it is determined that these antiquated systems are using a cesspool or a hollow seepage pit. These excavations shall be abandoned or repaired under permit immediately.

7. Any OWTS repaired or abandoned without a permit, the property owner shall provide "evidence" that the work was completed properly. Such evidence might include a letter from the contractor that performed the work, photographs of the work, bills for materials and supplies etc.

.

OWTS Failure

1. A failing onsite wastewater treatment system is defined in Section 19 Chapter 7 of the Ordinance. In general terms a system has failed when wastewater is no longer safely treated or discharged and therefore represents a health risk or a threat to the environment. Signs of a failing system may range from an elevated liquid level in the tank to a discharge of effluent to the surface of the ground.

2. Upon receipt of a compliant of overflowing sewage. P&B will start an enforcement action. If during the subsequent investigation these allegations are confirmed, a Notice of Violation will be issued to the property owner directing them to take immediate action to stop the discharge and to repair the system under permit and inspection by code enforcement. Repairs shall be made within thirty days of receiving the notice unless code enforcement and the property owner in question have agreed on temporary septic system pumping, until the owner is able to save sufficient funds for septic system repairs

CHAPTER 14

EDUCATION & OUTREACH

An onsite sewage system is a significant investment for the property owner and to the public that is potentially impacted from failing or poorly designed and installed systems. This is especially so with the increased costs of newer systems that depends on supplemental treatment. Yet, there is a lot of myth and mis-information about how to take care of and maintain onsite systems. Education and outreach is vital to supporting an informed consumer who is better able to assure proper maintenance that reduces the chance of failure.

Direct Staff Contact

The primary method of education and outreach is by direct interaction between building department staff and the public. The building department routinely receives and responds to phone calls and office visits by private property owners, consultants and contractors with questions about the regulations and or the permit process. As part of the building department's role in the planning process, we will regularly answer questions and provide information to consultants, staff from other departments or agencies and occasionally directly to decision makers such as members of the Planning Commission and the Board of Supervisors.

Planning and Building Website

All OWTS permit application forms and instructions are available on the building department website. In addition to the forms, the building department posts or provides links to the various regulations such as the applicable sections of the Central Coast Regional Water Quality Control Board's Basin Plan and the County's OWTS ordinance. Additionally, there is general information on the website about proper OWTS maintenance. http://www.slocounty.ca.gov/planning.htm

Stakeholder/Community Meetings

Stakeholder or community meetings are generally conducted as outreach efforts for significant or important projects such as the writing/implementation of new regulations. The number of meetings will vary depending on the nature of the project that is being discussed.

- *A meeting is convened at the outset to explain the goals and objectives of the project, answer questions and to gather comments and concerns from the attendees. If the project is area specific, the community meeting is held at a venue close to the area under discussion. If a project has county wide implications, multiple meetings are scheduled with one usually held in the southern part of the county and the other in the north county.*
- *Depending on the length of time that will be required to complete the project, status or progress meetings will be held to update interested parties. In lieu or a meeting, progress or status reports*

may be distributed electronically.

- *When the project has been completed and a draft report prepared, a second round of meetings are scheduled to present the findings and to take questions and comments.*
- *Occasionally, extensive modifications of the draft report are necessary due to volume and or nature of the comments received. When this occurs, another round of meetings is convened to again present the report, highlight the changes and take questions and listen to comments.*

Ongoing Education

The building department shall look for opportunities to collaborate with other interest groups such as the California Onsite Wastewater Association (COWA), home owners' organizations, real estate groups and the building industry to provide reliable and accurate information about septic system functioning and proper maintenance. See Appendix 6 for a sample Septic System educational flyer.

The building department has proposed using Supplemental Treatment as a mitigating measure when seepage pits are used, for increasing OWTS density and in those instances when it is not possible to install a system that meets San Luis Obispo County standards. While the use of such systems will require operating permits with routine, ongoing inspection and maintenance, owner education on how these systems work and the importance of maintenance will be necessary. Therefore the building department will work with representatives from the industry to develop appropriate education materials that will be provided to the property owner when the operating permit is issued.

APPENDIX III

SYNOPSIS OF GROUNDWATER TEST RESULTS IN NON-SEWERED URBAN AREAS OF SAN LUIS OBISPO COUNTY AND REQUIREMENTS FOR FUTURE ON-SITE WASTEWATER DISPOSAL SYSTEMS.

Creston

LOCAL CONDITIONS:

The population of the town is approximately 94. The town covers an approximate area of 0.57 square miles. The average rainfall is 13 inches a year. The typical lot size is ½ acre. All houses and businesses utilize septic systems for sewer disposal. The town is flanked by the Huero Huero Creek to the east, and the West Branch Huero Huero Creek to the west. The soils are typically river alluvium with sand and gravel. Seasonal high groundwater is a problem particularly with lots closer to the creeks.

All buildings are served by private water wells, or State small water systems. There are three public water systems in the town, and this is where we looked for data. The Creston School is located on the eastern edge of the town. Total Coliform Bacteria has been absent from 1997. Nitrate readings have fluctuated between 2.5 to 17 mg/l with no upward trend. The Loading Chute is a restaurant on the south side of town. Total Coliform Bacteria (TCB) has been absent from 2006. Nitrate readings have trended upwards slightly from 1.8-2.9 mg/l. The Long Branch Saloon is in the middle of town. TCB has not been present over the test period starting in 1996. Nitrate readings have trended slightly upwards from "Not Detected" to 3.1 mg/l.

Percolation testing is required for all new septic systems. There is some evidence of high groundwater. Depth to Groundwater (GW) readings are required during the rainy season November-April. The highest recorded depth to GW is the setback point for septic leachlines.

SPECIAL REQUIREMENTS:

Septic systems shall be designed to keep leachlines a minimum of 5 feet above recorded high groundwater measurements. This can usually be achieved with an at grade or mound dispersal system. If 5 feet separation cannot be achieved, a supplemental treatment system will be added to the septic design with disinfection. In any case separation would never be less than 2 feet above the reported high groundwater.

Reference: San Luis Obispo County Environmental Health Services Department

GARDEN FARMS

LOCAL CONDITIONS:

Garden Farms is approximately 1 square mile with a population of 386. It is bordered by El Camino Real to the east, and Santa Margarita Creek to the north and west. Santa Margarita Creek bisects the community in the south. The average rainfall is 21 inches a year. The average lot size is 0.5 to one acre. All residences utilize septic systems for wastewater disposal.

Many of the residences rely on public water through Garden Farms Community Water System. The system has three water wells, but wells 1, 2, were sampled for water testing information. The wells have tested negative for coliform during the past five years, and nitrates have been running between 0-4.2. Both wells are located in the northern portion of the community.

Percolation testing is required for all new septic systems. Garden Farms has high seasonal groundwater throughout the community. Depth to groundwater (GW), readings are required during the rainy season November-April. The highest recorded depth to GW is the setback point for septic leachlines.

SPECIAL REQUIREMENTS:

Septic systems shall be designed to keep leachlines a minimum of 5 feet above recorded high groundwater measurements. If this can't be achieved with standard septic leachlines, then an engineered at grade or mound dispersal system will be called for. If 5 feet separation cannot be achieved, a supplemental treatment system will have to be added to the septic design with disinfection. In any case separation would never be less than 2 feet.

Reference: Garden Farms Community Water System

LOS OSOS / BAYWOOD PARK

Local Conditions:

The population of the Los Osos / Baywood Park area is approximately 14,000. The Los Osos / Baywood Park communities cover 12.73 Square Miles. The Average rainfall is 17 inches per year, however recent years the average is closer to 5 inches per year. The entire community is served by septic systems, but the majority of the central area of Los Osos and all of Baywood Park will be served by sewer starting in 2016.

The Los Osos / Baywood Park area is bordered by the Estero Bay to the north and west. To the North east the community is bordered by a range of volcanic ridges, commonly called the "Seven Sisters." To the South the community is bordered by Montano de Oro State Park, and Clark Valley. To the East, the

community is mostly alluvial valley and the rich soil is ideal for farming . The Los Osos / Baywood Park area is underlain by a diminishing aquifer which supplies the water for the community. The aquifer receives water from rainfall directly, and from the watershed around the Los Osos Valley and behind San Luis Obispo.

The Los Osos Baywood Park community is served by the Golden State Water Company. Due to over-drafting and diminishing rainfall, the groundwater constituent concentrations are increasing. One of the water wells serving the community is showing seawater intrusion. Another of the wells is vulnerable to waste transfer and recycling operations. Combined nitrate readings showed levels between 2.7-35 ppm with 19 ppm being the average. Source of contamination include runoff and leaching of fertilizers, and leaching from septic systems.

Since 1983 Los Osos and Baywood Park has been subject to a Prohibition of Waste Discharge from individual sewage disposal systems, preventing the placement of additional septic systems. In 2016 a new sewer system will be available and this area will once again be allowed to build as long as the buildings utilize the sewer service, and water is available. Outside the sewered area buildings will remain on septic systems. It is reasonable to believe that once all septic systems in the prohibition area have been removed, and all the structures are connected to the sewer, nitrate levels will diminish and water quality will improve in the community. This will make water quality difficult to evaluate. Groundwater testing should concentrate on district well reports in the un-sewered areas of the community, particularly wells that are surrounded or near septic systems.

Special Requirements:

High groundwater, rapid percolation rates, and density are the primary concerns for the Los Osos area. Future lots utilizing septic systems should be a minimum of 2 acres. Septic systems leachlines shall be designed to be shallow and stop the practice of using seepage pits. In areas where groundwater is recorded within 20' of the surface, advanced treatment systems should be utilized to reduce Total Suspended Solids (TSS), Biological Oxygen Demands (BOD), nitrates, and coliform bacteria.

Reference: Golden State Water Company, Los Osos CSD

NIPOMO MESA

LOCAL CONDITIONS:

The population of the Nipomo mesa is approximately 16,000. The area is approximately 33 square miles of unconsolidated beach sands. Approximately 1/3rd of the population is served by sewer. The other 2/3rds of the population utilize septic systems on lots of 1 acre or larger. If a public water system is available, the county allows a lot size decrease to ½ acre for septic systems.

The average rainfall for the Nipomo Mesa is 15.9 inches per year. The mesa is underlain by the Santa Maria Groundwater Basin. The basin is 256 square miles, bounded on the north by the San Luis and

Santa Lucia mountain range, on the south by the Casmalia Soloman Hills, on the east by San Rafael Mountains, and on the west by the Pacific Ocean. The basin receives water from rainfall directly and runoff from several major watersheds. Sediments from the nearby mountains deposited unconsolidated alluvium averaging 1000 feet in depth.
The Nipomo mesa has many public water systems, agricultural water systems, and private water systems. The groundwater under the Nipomo mesa has fallen significantly, and the local water agencies are trying to find a supplemental water source. As the water table decreases the constituent load increases and we found many of the water wells showing nitrate ranges from 3-160 mg/l, with a mean of 24 mg/l. This is more than half of the State Maximum Contamination Level (MCL), of 45 mg/l. The high nitrate readings are primarily associated with many years of agriculture both in the Santa Maria Valley and on the Nipomo Mesa.

One of the water wells in our sample tested positive for total coliforms. After this well was disinfected, the coliforms were no longer present, and have not re-appeared in future tests.

Percolation testing is not required for the Nipomo Mesa as the mesa is primarily sandy soils that percolate very well and groundwater is never closer than 100 feet from the surface.

Nipomo Mesa has had many septic system failures, particularly on half acre lots. Many of the systems failed within a 1-3 year period. All of the failures on newer systems had one thing in common, the septic systems were placed under well irrigated lawns and the septic systems did not have a chance to evapotranspirate properly. The failures typically manifested with black biomats surrounding the leachlines and not allowing effluent to percolate into the soils.

SPECIAL REQUIREMENTS:

Future septic systems should be placed on lots of at least one acre, and The Planning Department should require landscape plans as part of the permitting process. Lawns should not be allowed near or over septic systems.

Due to the high nitrate readings around the mesa, we should require larger lots to help spread the sewage flows and therefore reduce the levels of nitrate caused by septic systems. The typical lot size for a dwelling with septic and water should be increased from one acre to 2 acres, and a lot with public water and septic should be a minimum of 1 acre. One acre lots with septic and water, shall only be allowed if the septic system is a supplemental treatment system that reduces BOD and TSS to 10mg/l,10mg/l respectively, and reduces nitrate by 50% or more. One acre lots will not be allowed to have a second unit, but second units will be allowed on 2 acre lots if the second unit has a stand-alone septic system.

Reference: Golden State Water Company, Nipomo CSD

SANTA MARGARITA:

LOCAL CONDITIONS:

The population of Santa Margarita is approximately 1,259. The town covers an approximate half square mile. The average rainfall is 26 inches a year. The typical lot size is 25X100, but two lots are required to accommodate house and septic system. All houses and business in the town utilize septic systems for sewer disposal. The town has one blue line creek flowing through the Eastern portion of the town, Yerba Buena Creek, and has a blue line creek bordering the Northwestern portion of the town, Santa Margarita Creek. The soil in the town is typically clayey and the town is under laid by seasonal high groundwater.

This area is served by two public water wells through San Luis Obispo County (SLOCo) Public Works, CSA 23. Well #3 is a deep, fractured rock well. Well #4 is a relatively shallow well that pumps from the alluvial deposits of Santa Margarita Creek. CSA23 posts a well water report annually. Since 2008, TCB has been absent, and nitrate readings have ranged from 6-12 mg/l. Nitrate readings are trending upwards, but are well below the State Maximum Contamination Limit of 45 mg/l.

Percolation testing is required for all new septic systems. Santa Margarita is known to have high groundwater throughout the community, therefore depth to groundwater, readings are required during the rainy season November-April. The highest recorded depth to groundwater is the setback point for septic leachlines.

SPECIAL REQUIREMENTS:

Septic systems must be designed to keep leachlines a minimum of 5 feet above recorded high groundwater measurements. This can usually be achieved with an At Grade or Mound dispersal system. If 5 feet separation cannot be achieved, a supplemental treatment system will have to be added to the septic design with disinfection. In any case separation would never be less than 2 feet. If Nitrate levels continue to rise in local public wells, it will be wise to include supplemental treatment systems that provide denitrification to new and replacement septic systems.

Reference: SLO County Water.org, CSA 23

SHANDON:

LOCAL CONDITIONS:

The population of the town is approximately 1,295. The town covers an approximate area of 3 square miles. The typical rainfall is 12 inches per year. The typical lot size is 50X140, which offers enough

room for a house and septic system. All houses and business in the town utilize septic systems for sewer disposal.

The town is bisected by one blue line creek flowing through the Eastern portion of the town, The Estrella River. The soil in the town is typically river alluvium, and depth to groundwater is not an issue.

This area is served by two public water wells through SLOCo Public Works,(CSA 16). Well #4 and Well #5. Both wells tap into the Paso Robles Groundwater Basin. CSA 16 posts a well water report annually. Since 2008, TCB has been absent, and nitrate readings have ranged from 14.5-16.8 mg/l. Nitrate readings are trending upwards, but are well below the State Maximum Contamination Level (MCL) of 45 mg/l.

Percolation testing is required for all new septic systems. Depth to groundwater is not an issue as 15' borings do not encounter ground water.

SPECIAL REQUIREMENTS:

Future Septic systems for this area should be designed with an emphasis toward dilution, maximum spreading of effluent, and limited depth of effluent spreading to maximize aeration.

Reference: SLO County Water.org, CSA 16

TEMPLETON:

LOCAL CONDITIONS:

The Population of Templeton is approximately 7,674. The town covers an approximate area of 7.6 square miles, however most north county residents consider everything between Atascadero and Paso Robles to be Templeton. The Average rainfall is 14.7 inches per year, however this average has been much lower during the last three years. Templeton sits on river alluvium and is surrounded by the Salinas River to the East, Atascadero to the South, The Costal Range to the West, and Paso Robles to the North.

The community is divided into two sections. The townsite is served by a Community Service District which provides sewer and water. This includes most of the community on the East side of Hwy 101 up to a half mile. The second part is the western rural area which is comprised of larger lots that have wells and septic systems.

The Templeton Community Service District (CSD) utilizes nine water wells. The Smith River well and Creekside River well draw water from the Salinas River underflow. The Creekside Deepwell, Platz # 4 well, Silva well, Cow Meadow well, Bonita well, Graf well, and Fortini well are Atascadero basin wells. Combined well reports showed no incidence of TCB and nitrate readings ranged between 0-48.2 ppm.

The two wells with the nitrate spikes are located in an old dairy, and contamination is due to fertilizer. Water blended from the different wells produce water with 28.5 ppm of nitrate well below the State MCL of 45 ppm. The CSD provides water for 5,400 customers, and has approximately 1900 sewer connections.

SPECIAL REQUIREMENTS:

Fast percolating sandy soils, particularly near the Salinas River are of primary concern. Maintaining a safe distance from septic system effluent to groundwater, and making sure effluent is dispersed over a larger area and closer to the surface. Seepage pits are not recommended for lots close to the Salinas River or any lot that shows influence of high groundwater. New and replacement septic systems near the Fortini well, should be designed to maintain proper setback to the well, and limit effluent to leachlines as shallow as possible.

Reference: Templeton CSD